City and County of San Francisco
Department of City Planning

300 HOWARD STREET
Draft
Environmental Impact Report
89.589E

Draft EIR Publication Date: January 31, 1991
Draft EIR Public Hearing Date: March 7, 1991
Draft EIR Public Comment Period: January 31 to March 18, 1991

SCH #90030674

Written comments should be sent to
The Environmental Review Officer
450 McAllister Street, Sixth Floor
San Francisco, CA 94102

City and County of San Francisco
Department of City Planning

450 McAllister Street
San Francisco, CA 94102

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DATE: January 31, 1991

TO: Distribution List for the 300 Howard Street Project Draft EIR

FROM: Barbara W. Sahm, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the 300 Howard Street Project

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This is the Draft of the Environmental Impact Report for the 300 Howard Street project. A public hearing will be held on the adequacy and accuracy of this document on March 7, 1991. After the public hearing, our office will prepare and publish a document titled "Summary of Comments and Responses" which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments. It may also specify changes to this Draft EIR. Those who testify at the hearing on the draft will automatically receive a copy of the Comments and Responses document along with notice of the date reserved for certification (usually about nine weeks after the hearing on the draft); others may receive such copies and notice on request or by visiting our office. This Draft EIR together with the Summary of Comments and Responses document will be considered by the City Planning Commission in an advertised public meeting and certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Environmental Impact Report. *The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution.* It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Summary of Comments and Responses have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR to private individuals only if they request them.

If you want a copy of the Final EIR, please so indicate in the space provided on the next page and mail the request to the Office of Environmental Review within two weeks after certification of the EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final EIR.

Thank you for your interest in this project.

PLACE
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Department of City Planning
Office of Environmental Review
450 McAllister Street, 6th Floor
San Francisco, CA 94102

Attn: Diane Oshima, EIR Coordinator
89.589E - 300 Howard Street Project

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RETURN REQUEST REQUIRED FOR FINAL
ENVIRONMENTAL IMPACT REPORT

REQUEST FOR FINAL ENVIRONMENTAL IMPACT REPORT

TO: Department of City Planning,
Office of Environmental Review

Please send me a copy of the Final EIR.

Signed: _____

Print Your Name and Address Below

_____
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|_____

City and County of San Francisco
Department of City Planning

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This report has been printed on post-consumer recycled paper.

300 HOWARD STREET
DRAFT ENVIRONMENTAL IMPACT REPORT

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

TABLE OF CONTENTS (Continued)

Page

LIST OF FIGURES

I. INTRODUCTION

This Environmental Impact Report (EIR) evaluates the potentially significant environmental effects associated with the proposed 300 Howard Street project. The analyses contained herein address project-specific impacts and cumulative impacts to which the project would contribute.

This EIR incorporates information from Program EIRs that have been previously published. Most of this information is related to cumulative impacts of downtown growth contained in the Mission Bay EIR (Final EIR certified August 23, 1990, Case No. 86.505E), South of Market EIR (Final EIR certified December 7, 1989, Case No. 85.463E), and the Downtown Plan EIR (Final EIR certified October 18, 1984, Case No. EE81.3). The Mission Bay EIR covers the impacts of potential development in a 300-acre area just south of the greater downtown, from Townsend Street to Mariposa Street, east of the I-280 freeway. The South of Market Plan EIR analyzes impacts of development under the proposed South of Market Plan development controls and alternatives in the area generally south of Mission Street to the Mission Bay planning area and east of U.S. 101 to the Rincon Hill area east of Second Street. The Downtown Plan EIR analyzes the impacts of various development policy alternatives in the C-3 (Downtown) zoning districts in San Francisco.

The Mission Bay and South of Market Plan EIRs include the most current estimates of employment growth for the Downtown & Vicinity and for the rest of the City; revised analysis and conclusions regarding overall cumulative transportation impacts in the future; and new cumulative air quality information. (The term "Downtown & Vicinity" means the C-3 District and the areas around it: South of Market, Mission Bay, South Van Ness, Civic Center, and the Northeastern Waterfront. See Mission Bay EIR, Vol. II, pp. IV.4-5.) The Downtown Plan EIR contains other cumulative impact information regarding such topics as energy consumption, community services and seismic effects that also is applicable to the 300 Howard Street project.

Where information from these area-wide EIRs is presented in this project EIR, incorporation by reference with a summary is used pursuant to CEQA Sections 21061 and 21100 (see also State CEQA Guidelines Section 15150). Documents incorporated by reference are available for public review at the San Francisco Department of City Planning, 450 McAllister Street, San Francisco; the San Francisco Main Library and various branch libraries.

II. SUMMARY

A. PROJECT DESCRIPTION

Bechtel Investments, Inc., proposes to build a 27-story, approximately 350 foot tall (plus one-story, 16 foot roof-top mechanical level) office and retail building at the northwest corner of the intersection of Howard and Beale Streets; rehabilitate an existing three-story building at the northeast corner of the intersection of Howard and Fremont Streets; and develop a plaza between these two buildings. The project architect is The Architects Collaborative, Inc.

The 35,003 square foot (sq. ft.) project site is composed of Lots 5, 6, 7, 8 and possibly Lot 9 of Assessor's Block 3719. The project block is bounded by Mission Street on the north, Beale Street on the east, Howard Street on the south, and Fremont Street on the west; elevated ramps serving the Transbay Transit Terminal bisect the project block east-west. The project site is bounded by Beale Street on the east, Howard Street on the south, Fremont Street on the west, and the Transbay Transit Terminal ramps on the north.

The project would replace an existing 180-space, 29,170 sq. ft. attendant-controlled surface parking lot and possibly a 2,500 sq. ft. vacant lot, the former site of the Fremont House Restaurant. An existing three-story building, located at 342 Howard Street, would be rehabilitated as part of the proposed project. This building, known as the Marine Electric Company building, currently contains ground floor retail space and vacant space above, and is designated as a Category III Building in the San Francisco Downtown Plan. There are currently six employees on the site associated with the parking lot and retail space.

The new office tower would contain approximately 391,650 sq. ft. of office area that would count towards the project's gross floor area. The office tower would also contain approximately 41,760 sq. ft. of parking including ramps (27,870 sq. ft. excluding ramps; about 130 tandem valet spaces) on two subsurface levels; about 9,350 sq. ft. of retail space on the ground floor; and about 30,050 sq. ft. of storage and mechanical area in the basement and a rooftop mechanical penthouse. Of these non-office uses, about 2,590 sq. ft. would count towards the project's gross floor area. Access to two truck loading docks and the subsurface parking level would be from Beale Street. Pedestrian access to the project would be provided on Howard, Fremont and Beale Streets.

The existing Marine Electric Company Building is an architecturally rated structure and would contain approximately 3,130 sq. ft. of office area that would count towards the project's gross floor area. The building would also contain about 5,950 sq. ft. of restaurant space on the ground floor and second level mezzanine, and about 3,090 sq. ft. of basement storage and maintenance space. Of these non-office uses, about 1,150 sq. ft. would count towards the project's gross floor area.

The proposed project, including both the new office tower and the rehabilitated Marine Electric Company Building, would contain a total of about 512,830 sq. ft., of which approximately 398,520 sq. ft. would be applicable to the project's floor area ratio (FAR) as calculated under the City Planning Code. The proposed project would also include about 8,600 sq. ft. of exterior open space on the former Fremont House site and in the area between the office tower and the Marine Electric Company building, plus 800 sq. ft. of exterior walkway area to be developed along the northern edge of the Fremont House site.

Total net changes in floor area for the site would be an increase of about 394,780 sq. ft. of gross floor area in office use, an increase of about 12,000 sq. ft. of retail (including restaurant) space, and an addition of about 8,600 sq. ft. of open space. There would be a decrease of about 50 parking spaces. Office use and open space would be new uses to the site.

The site is in the C-3-0 (SD) (Downtown Office Special Development) Use District and the 350-S Height and Bulk District. The basic permitted floor area ratio (FAR) is 6:1 and the maximum allowable FAR, including transferable development rights (TDR) is 18:1. The FAR of the project would be about 11.4:1, and would require approximately 188,500 sq. ft. of TDR. The project's 350 foot height, plus a 16 foot tall mechanical penthouse, would comply with the height limit for the site. The project would require approval under City Planning Code Section 309 (for permit review in C-3 districts) and Sections 321 and 322 (for project authorization under the Office Development Limitation Program) before issuance of site or building permits could occur.

Project construction would take about 18-20 months; total construction cost would be about $47,850,000 (1989 dollars). Project completion and initial occupancy is anticipated for early 1994.

B. MAIN ENVIRONMENTAL EFFECTS

LAND USE AND ZONING (pp. 62 to 72)

The site is in the C-3-0 (SD) Downtown Office Special Development Use District and the 350-S Height and Bulk District. The project would replace a 180 space parking lot and a vacant lot with a high-rise office building, new retail and open space uses, and a net decrease in the number of parking spaces. An existing three-story building on the project site would be rehabilitated and would contain office and retail use. The project would be similar to newer land uses to the northeast and south. The project would differ from land uses to the east and west, which consist predominantly of older low-rise warehouse buildings and surface parking lots characteristic of the South of Market area, along with mid- and high-rise commercial buildings.

As required by City Planning Code Sections 149 and 314, respectively, the project would provide art work and child care in a manner to be determined. The required open space would be provided on-site in the form of an outdoor plaza.

Forecasts in the Mission Bay EIR show a total of about 94,459,000 to 94,884,000 gross sq. ft. of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,500,000 to 25,900,000 gross sq. ft. over the amount existing in 1985. The forecast accounts for demolition and new construction and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million sq. ft. of office space vacant in 1985 and another several million approved or under construction as of 1985. About 75% of the office space would be in the C-3 District. The proposed project would contribute about one-half of one percent of the total future amount of office space in the Downtown & Vicinity.

ARCHITECTURAL AND HISTORIC RESOURCES (p. 72)

The Marine Electric Company building on the project site is designated as a Category III - Contributory building in the Downtown Plan, received a "B" rating in the Heritage Survey and was rated "1" in the 1976 Department of City Planning Architectural Inventory.

The Marine Electric Company building would be rehabilitated as part of the proposed project. The rehabilitation would consist of seismic retrofitting and exterior and interior work. The exterior brickwork would be cleaned and repointed, and wood window and door frames replaced as necessary. The existing Howard and Fremont Street facade treatment, including the cornice, would be extended to cover all four sides of the building if the site of the former Fremont House is developed as a portion of the project open space. The interior would be rebuilt to accommodate proposed uses.

URBAN DESIGN (pp. 73 to 74)

The 350 foot tall project would contain a base, a lower tower and an upper tower, defined by building setbacks. It would be visible from long range viewpoints such as Potrero Hill and Twin Peaks. It would be larger in scale and height than existing small-scale, low- and mid-rise buildings on the same block and in the general vicinity, and would be similar in height and scale to existing nearby high-rise buildings including the 301 Howard Street, 100 First Street, and Pacific Gateway buildings.

SHADOW AND WIND (pp. 74 to 90)

The project would cast no new shadow on any Recreation and Park Department property during the hours defined by the Sunlight Ordinance and would thus comply with the ordinance. The project would cast new shadow on streets, sidewalks and buildings in the project area.

A wind tunnel test for the project site indicates that wind speeds would not exceed the 11 mph equivalent wind speed pedestrian comfort criterion established in the Downtown Plan at any of the 23 locations tested; the seven mph seating area criterion would not be exceeded at any of test locations within project seating areas.

EMPLOYMENT AND POPULATION (pp. 90 to 93)

The project would accommodate about 1,610 net new employees in the C-3 District. About 2,340 additional jobs in the Bay Area would result from the employment multiplier effect of project operation. The project would require about 190 person-years of construction labor. About 390 additional person-years of employment would be generated in the Bay Area, as a result of the multiplier effect of project construction. Housing demand generated by the project would be approximately 150 units in San Francisco, according to the formula in Section 313 of the City Planning Code (Office Affordable Housing Production Program, Ordinance 358-85).

The importance of San Francisco employment as a factor affecting regional housing demand will decline over time because more housing will be added in the City relative to job growth, compared to the situation in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. Housing demand generated by San Francisco employees in areas outside San Francisco will likely concentrate in some close-in communities with reasonable transportation access to the workplace: the western parts of the East Bay and east of the hills along BART corridors, northern San Mateo County and parts of Marin County.

About half of the people working in the Downtown & Vicinity would live in the City in 2000 and 2020. The rest would live in communities throughout the rest of the region: about 30% in the East Bay, 13% in the Peninsula and in the South Bay and about 8% in the North Bay. Downtown & Vicinity workers living in the City would represent about 57% of the City's employed residents. People working downtown would represent a considerably smaller proportion (about four to nine percent) of the employed residents of other Bay Area communities.

TRANSPORTATION (pp. 94 to 116)

The project would generate about 8,860 net new person trips per day. About 1,287 new outbound trips would occur during the p.m. peak period, 802 of these during the p.m. peak hour.

If the Mission Street ramps were to remain closed, cumulative development, including that from the proposed project, by the year 2000 would be expected to further exacerbate existing (1990, ramps closed) peak-hour vehicle Level of Service (LOS) E/F conditions at the Beale / Howard Streets and Fremont / Howard Streets intersections to LOS F, and would worsen existing LOS A/B conditions at the Beale / Mission Streets intersection to LOS B. If the Mission Street ramps were to reopen, by the year 2000 pre-closure peak-hour LOS A conditions at the Fremont / Howard Streets intersection would decline to A/B, LOS B conditions at the Fremont / Mission Streets intersection would decline to B/C, and LOS E conditions at the Beale / Mission Streets intersection would worsen to LOS F.

The project would represent about 0.2% of total outbound regional auto demand on major corridors (bridges and freeways) in the year 2000. The project percent would not be measurable against day-to-day fluctuations in traffic volumes. However, cumulative travel demand is projected to exceed p.m. peak period capacity of some of the freeways serving San Francisco, resulting in shifts in travel modes (from automobiles to public transit and ridesharing).

The project would remove 180 existing long-term valet parking spaces and would provide about 27,870 sq. ft. of parking, which the Department of City Planning estimates could accommodate about 130 vehicles with tandem valet operators in the new building. Estimated equivalent daily parking demand from the project would be for about 227 spaces, resulting in an unmet demand of 277 spaces (total project demand [227] plus displaced public parking [180] minus proposed parking capacity [130] equals 277 space total unmet demand).

The proposed project would generate about 380 new pedestrian trips on the adjacent sidewalks during the noon 15-minute peak period and about 266 new pedestrian trips during the p.m. 15-minute peak period. Sidewalk operations, currently in the unimpeded range at locations adjacent to the project site during the noon and p.m. peak hours, would change to the impeded range with the addition of the project to existing conditions at the Howard Street sidewalk during the noon hour and at the Beale Street sidewalk during the noon and p.m. peak hours. Crosswalk operations, currently in the unimpeded range at locations studied for the project, would change to the impeded range at the crosswalk across Howard Street during the p.m. peak hour.

With cumulative development by the year 2000 (project plus other development), sidewalk and crosswalk operations would be in the unimpeded range for all locations studied for the project, except for the Howard Street sidewalk during the noon hour, the Beale Street sidewalk during the noon and p.m. peak hours, the Fremont Street east sidewalk during the p.m. peak hour, and the crosswalk across Howard Street during the p.m. peak hour which would be in the impeded range.

The project would add about 188 outbound trips to MUNI and 207 outbound trips to BART during the p.m. peak period in the year 2000. The project would generate an annual cost deficit to MUNI of about $43,042, assuming that the cost deficit per ride remains the same. The extent to which this project would offset this deficit through its contributions to the General Fund, the Transit Impact Development Fee, and sales tax revenues is not known. The project would result in an annual net operating deficit to BART of about $371,336. BART's operating deficit per passenger is likely to decline in real terms as planned service improvements become operational in the future.

Both the Mission Bay and South of Market Plan EIRs show that by 2000, congested highway conditions caused by cumulative regional development would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

The transit demand from the project would represent about 0.4% of the total transit demand in the year 2000. Cumulative development in the year 2000, in conjunction with planned capacity increases of transit carriers, would be expected to cause crowded conditions for the following transit providers during the peak period: MUNI Northeast Corridor, LOS D to E; BART Transbay, LOS E to F; and AC Transit, LOS C to E.

By 2020, all but the Southwest MUNI screenline would be operating beyond MUNI's load standard with projected cumulative demand. Additional service required could include new light rail service to the Geary Boulevard corridor to the Northwest, and to the Bayshore corridor in the Southeast area of the City. In 2020, crowded conditions during the peak period also would be expected for Golden Gate Transit (LOS D), BART Transbay (LOS F) and AC Transit (LOS E).

Sidewalk detours and curb lane closures on the Howard Street and Beale Street project frontages would be necessary during construction. Construction truck traffic would be limited to the period between 9:00 a.m. and 3:30 p.m. Construction traffic would slow traffic movements along Howard and Beale Streets, including those of MUNI buses.

AIR QUALITY (pp. 117 to 120)

Project-related vehicular traffic would add to cumulative regional pollutant emissions, and contribute to the continued failure of the Bay Area to attain federal ozone and CO standards. Project-related traffic alone would contribute less than one percent of transportation related emissions resulting from development in the County, and thus would not pose a potentially significant effect on air quality. However, emissions of particulates generated by the project together with cumulative development would increase particulate concentrations, which would increase the frequency of fine particulate matter standard (PM_{10}) violations in San Francisco, with concomitant health effects and reduced visibility.

Currently (1990) the eight-hour CO concentrations at the Howard / Fremont and Mission / Beale intersections are estimated to violate air quality standards. Local CO concentrations are predicted to be less in 2000 than in 1985, because the effects of emission controls on new vehicles would offset increases in traffic volumes and congestion. While emission rates are expected to decrease in the future, it is estimated there still would be occasional violations of local CO concentration standards at the Howard / Fremont intersection in 2000 (if the ramp were to remain closed) due to cumulative development. This condition would be a result of total traffic at the intersection, a proportion of which would be attributed to the project.

CONSTRUCTION NOISE (pp. 120 to 124)

Project construction would temporarily increase noise and vibration levels in the area of the site during the 18- to 20-month construction period. Highest average construction noise levels experienced in residences or offices and stores (depending on whether piledriving were to occur at night or during daytime hours) near the site could interfere with rest and speech. Pile driving and the operation of construction equipment could temporarily raise the noise level up to 105 dBA with windows open and 90 dBA with windows closed in adjacent buildings. Pile driving would cause vibrations, which are more irritating to some people than noise, in adjacent and nearby buildings. Should more than one building be under construction at the same time as construction of the project, noise levels would be expected to increase by another two to five dBA.

GEOLOGY AND SEISMICITY (pp. 124 to 127)

The Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas and Hayward faults. Employment growth, such as that expected for 300 Howard Street, would result in large numbers of persons being exposed in the future to earthquake hazards if an event occured during the day. Since new buildings are subject to more stringent building and structural standards than are older buildings, persons working in buildings such as the proposed project (which also includes a seismically upgraded older building) would be relatively safer than those in some older buildings.

HAZARDOUS MATERIALS (pp. 127 to 134)

The project site and surrounding areas have a history of industrial, manufacturing, and commercial land uses. Those types of land uses often involve handling and storage of chemicals whose properties of toxicity, ignitability, corrosivity, or reactivity render them hazardous materials or hazardous wastes.

The project site is bayward of the historic high tide line and falls under provisions of San Francisco's "Analyzing the Soil for Hazardous Wastes" ordinance. Sampling and testing of the project site have shown that hazardous wastes generated by former site uses have affected soils and groundwater. Benzidine, polynuclear aromatic hydrocarbons, and volatile aromatic hydrocarbons have been detected in soils and groundwater; roughly half the area to be excavated contains contaminant concentrations exceeding state hazardous waste guidelines. Development of the site would result in disturbance of contaminated soil and groundwater.

Hazardous materials-related impacts of the project would be related almost entirely to excavation and disposal of contaminated soil and to construction dewatering. Unless properly managed, earthmoving in contaminated areas could directly expose on-site or nearby workers, the public, or the environment to soils, soil gases, dust, or groundwater contaminated with hazardous materials or wastes. Health and safety impacts would be proportional to the amount of contaminated soils uncovered. If contaminated fill were to be removed from the site during project implementation, the project would decrease proportionately available capacities of the region's hazardous waste treatment and disposal facilities.

GROWTH INDUCEMENT (pp. 134 to 135)

Increases in downtown office space from the proposed project would contribute to growth of local and regional markets for housing, goods and services. Although employment growth would not be reflected directly in increases in demand for housing and City services to residents, it is expected that some downtown workers would want to live in San Francisco, intensifying the demand for housing, retail goods and services. The project would be built in a developed urban area, and would require no expansion to the municipal infrastructure not already under consideration.

C. MITIGATION MEASURES

Some of the measures identified that would mitigate potentially significant environmental effects are presented below. A full recitation of mitigation measures proposed as part of the project or proposed for consideration are presented on pp. 136 to 142.

MEASURES PROPOSED AS PART OF THE PROJECT

- The sponsor would retain the services of an archaeologist. The Environmental Review Officer (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

  Given the archival history of the project site, an historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO would also require cooperation of the project sponsor in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

- Should archaeological resources be found following commencement of excavation activities, the archaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific mitigation measures, if necessary. Excavation or construction activities which might damage the discovered cultural resources would be suspended for a maximum of four weeks (cumulatively for all instances where the ERO has required a delay in excavation or construction) to permit inspection, recommendation and retrieval, if appropriate.

- Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed in an appropriate repository as determined by the ERO. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University along with three copies to the ERO.

- The project sponsor would require the contractor to sprinkle demolition sites with water continuously during demolition activity; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling of motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

- As recommended by the Environmental Protection Element of the San Francisco Master Plan, an analysis of noise reduction measures would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features could include fixed windows and climate control.

- The project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.

- The project sponsor would consult with the Department of Public Works to determine the time when pile driving would cause the least disturbance to neighboring uses. The project sponsor would require that the construction contractor limit pile driving activity to result in least disturbance. This could require a work permit from the Director of Public Works pursuant to San Francisco Noise Ordinance Section 2908, if pile driving during daytime hours is determined to be less disruptive to neighboring uses.

- A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by a California-licensed geotechnical engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project.

- If the project were to include dewatering, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.

- A site-specific Safety and Health Plan for hazardous materials and waste operations would be prepared and submitted to the San Francisco Department of Public Health before site activities would proceed. The site-specific Safety and Health Plan, which would be applicable to all activities at the site prior to completion of site remediation, would establish policies and procedures to protect workers and the public from potential hazards posed by hazardous wastes. The Plan would be prepared according to federal and California OSHA regulations for hazardous waste site Safety and Health plans (if such regulations are not adopted prior to initial site activities, National Institute for Occupational Safety and Health guidelines would be followed). The site safety officer's log would be made available to the San Francisco Department of Public Health for inspection.

- The site mitigation plan would involve a dust control program, to minimize potential public health impacts associated with exposure to contaminated soil dust.

- Reports (including sample locations, chain of custody forms, and laboratory analysis reports) of further site investigations (if any) would be sent to the San Francisco Department of Public Health.

- A report describing the remediation process in detail and certifying completion of remediation would be prepared by a Registered Environmental Assessor (REA) or registered engineer, and submitted to the San Francisco Department of Public Health. The report would include copies of hazardous waste transport manifests.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

- During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic conflicts and to accommodate queueing of MUNI buses prior to the peak hours. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Department of Parking and Traffic, the Fire Department, MUNI and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or which later become known.

- Prior to any excavation, a magnetic tank-locating survey would be carried out to ascertain whether any underground tanks exist at the site, and if so, their locations. If USTs were determined to be present, the San Francisco Department of Public Health would be consulted to determine whether they should be removed or left in place (as required by law).

- From the time that the current pavement covering the site is taken up until the time that all remedial activities have been completed, a buffer zone would be put in place around the contaminated area and site access would be restricted to necessary personnel. This would serve to prevent impacts associated with accidental public access to the site.

- A ruling from the State Department of Health Services would be sought regarding appropriate regulatory threshold levels for PNAs in soil, and the RWQCB would be contacted regarding appropriate cleanup levels for the contaminated groundwater. Copies of the written requests and any response would be filed with the San Francisco Department of Public Health.

- The project sponsor would employ licensed brokers or registered hazardous waste treatment engineers to handle its hazardous waste disposal needs, if any. Use of brokers or registered engineers would promote economical application of latest and best methods for waste handling of contaminated soils, such as recycling, reuse, waste minimization, or treatment or destruction of non-reusable waste using newly developing technologies.

D. ALTERNATIVES TO THE PROPOSED PROJECT

ALTERNATIVES NOT INCLUDED

No alternative site analysis was conducted for this EIR for a number of reasons. The policy to concentrate office development in the Downtown C-3 districts has been reaffirmed many times by the City Planning Commission and Board of Supervisors since 1985. Areas situated adjacent to the Downtown areas (the "ring neighborhoods") have been rezoned so as to protect those areas from the encroachment of office development, and to ensure that the Downtown continues to offer the highest commercial density in San Francisco. Thus, any shift of office development outside of the C-3 areas would constitute more than a mere rezoning, but would require a major overhaul and reconsideration of the planning policies for the entire east side of the City. As part of approving the Downtown Plan and implementation ordinances, the Board of Supervisors also established a limit on the amount of office space that could be approved in San Francisco (City Planning Code Sections 320-324). This "annual limit" in effect establishes a policy that some regional office demand be accommodated in San Francisco but that some also be accommodated elsewhere in the region on sites outside San Francisco. For these reasons, it would be infeasible to consider any alternative sites for this project outside the C-3 districts or outside the jurisdiction of the City. Finally, an analysis of other sites within the C-3 districts would be infeasible since there are no other sites within the downtown capable of eliminating the main impacts of this project.

ALTERNATIVE A: NO PROJECT

This alternative would entail no change to the site. The proposed project would not be built. The parking lot and the vacant lot located on the site would be retained. The three-story Marine Electric Company Building would not be altered.

This alternative could result in the development of other office space, possibly a highrise building comparable to the project, at another location. Alternative development within the San Francisco downtown area would result in jany of the same impacts as described for the project. The effects of development would depend largely on the location chosen and cannot be accurately determined. This alternative would preserve the option to develop a similar or different type of building on the site in the future.

ALTERNATIVE B: NO TRANSFER OF DEVELOPMENT RIGHTS, 5.0:1 FAR

The project as proposed would include the transfer of about 188,500 sq. ft. of development rights from as-yet unidentified sites. This alternative considers a project without TDR. The FAR would be 5.0:1, compared to 11.4:1 for the project.

As with the project, the Marine Electric Company building would be rehabilitated and would contain the same amount of retail and office space as it would in the project. The office tower would contain a total of approximately 236,870 sq. ft., and would contain about 169,430 sq. ft. of office space that would count towards the project's gross floor area compared to about 391,650 sq. ft. with the project. The building would be 10 stories tall (about 130 feet) compared to 27 stories (about 350 feet) for the project. Retail and parking space would be the same as in the proposed project. The open space requirement for this alternative would be about 3,620 sq. ft., which would be provided on the site in a manner similar to the project.

This alternative would be about 220 feet shorter than the project, and therefore would be less visible in mid- and long-range views than the project. It would comply with all setback and bulk requirements. Shadow from this alternative would be about 63% less than with the project. This alternative would not cause winds to exceed the pedestrian comfort criterion at any of the locations tested, nor would it cause the comfort criterion to be exceeded at test locations within seating areas. Total travel demand, air quality and energy impacts associated with on-site uses would be about 52% less than those of the proposed project because of its smaller size. However, traffic and air quality effects on local intersections would be the same as with the project as this alternative would have the same number of on-site parking spaces. Total parking demand generated would be about 56% less than that for the project. The potential during construction for encountering subsurface hazardous materials would be similar to the project, as a similar amount of excavation would be necessary. Construction noise impacts would be of a shorter duration, as the construction period would be shorter. This alternative would provide employment for about 725 employees, compared to about 1,615 employees with the project. It would generate a housing requirement of about 70 new dwelling units in San Francisco compared to 150 with the project under the Office Affordable Housing Production Program.

ALTERNATIVE C: 23-STORY TOWER, 9.7:1 FAR

The project as proposed would include the transfer of about 188,500 sq. ft. of development rights from as-yet unidentified sites. This alternative considers a building requiring about 129,750 sq. ft. of TDR. The FAR for this alternative would be 9.7:1, compared to 11.4:1 for the project.

As with the project, the Marine Electric Company building would be rehabilitated and would contain the same amount of retail and office space as it would in the project. The office tower would contain a total of approximately 408,200 sq. ft., and would contain about 333,250 sq. ft. of office space that would count towards the project's gross floor area compared to about 391,650 sq. ft. with the project. The building would be 23 stories tall (about 300 feet) compared to 27 stories (about 350 feet) for the project. Retail and parking space would be the same as in the proposed project. The open space requirement for this alternative would be about 6,900 sq. ft., which would be provided on the site in a manner similar to the project.

This alternative would be about 50 feet shorter than the project, and therefore would be less visible in mid- and long-range views than the project. It would comply with all setback and bulk requirements. Shadow from this alternative would be about 14% less than with the project. This alternative would not cause winds to exceed the pedestrian comfort criterion at any of the locations tested, nor would it cause the comfort criterion to be exceeded at test locations within seating areas. Total travel demand, air quality and energy impacts associated with on-site uses would be about 20% less than those of the proposed project because of the smaller amount of office space than with the project. However, traffic and air quality effects on local intersections would be the same as with the project as this alternative would have the same number of on-site parking spaces. Total parking demand generated would be about 22% less than for the project. The potential during construction for encountering subsurface hazardous materials would be similar to the project, as a similar amount of excavation would be necessary. Construction noise impacts would be of a shorter duration, as the construction period would be shorter. This alternative would provide employment for about 1,380 employees, compared to about 1,615 employees with the project. It would generate a housing requirement of about 130 new dwelling units in San Francisco compared to 150 with the project under the Office Affordable Housing Production Program.

ALTERNATIVE D: NO PARKING

This alternative would have all the characteristics of the proposed project except that the office tower would contain no parking. Under this alternative, the 130 parking spaces included in the project would not be provided. However, the two off-street loading docks and four van spaces contained in the project would be included in this alternative. Excavation for the office tower would be limited to excavation required for elevator pits and mechanical areas. The exterior physical attributes of the Marine Electric Company building and the office tower would be the same as for the proposed project.

Impacts on views, the shadow and wind environment, urban design and architectural resources, and growth inducement would be the same as for the proposed project. Construction noise impacts for this alternative would be slightly less as the office tower would require less excavation than the project. Travel demand, air quality and energy impacts associated with on-site uses would be the same as those of the proposed project because the amount of office and retail space would be the same as the project. The parking demand generated by this alternative would also be the same as that generated by the project. Traffic and air quality effects on local intersections, however, would be less than the project as this alternative would have a fewer number of on-site parking spaces. The potential during construction for encountering subsurface hazardous materials would be less than with the project, as a smaller amount of excavation would be necessary. This alternative would provide employment for about the same number of employees (1,615) as the project. It would generate a housing requirement of about the same number of new dwelling units (150) in San Francisco as the project under the Office Affordable Housing Production Program.

ALTERNATIVE E: LAND USE VARIANT FOR THE MARINE ELECTRIC COMPANY BUILDING

This variant would have all the characteristics of the proposed project except that the Marine Electric Company building would be developed with one level of restaurant use and two levels of office use (instead of two levels of restaurant use and one level of office use as proposed for the project). The exterior physical attributes of the Marine Electric Company building and the office tower would be the same as for the proposed project.

Impacts on views, the shadow and wind environment, urban design and architectural resources, construction noise, growth inducement and the potential during construction for encountering subsurface hazardous materials would be the same as for the proposed project. Travel demand, air quality and energy impacts associated with on-site uses would be about four percent less than those of the proposed project because of the slightly smaller amount of restaurant space and slightly larger amount of office space than the project. The difference in parking demand generated by this variant would be less than one percent from that generated by the project. Traffic and air quality effects on local intersections would be the same as with the project as this variant would have the same number of on-site parking spaces. This alternative would provide employment for about the same number of employees (1,615) as the project. It would generate a housing requirement of about the same number of new dwelling units (150) in San Francisco as the project under the Office Affordable Housing Production Program.

III. PROJECT DESCRIPTION

A. PROJECT SPONSOR'S OBJECTIVES

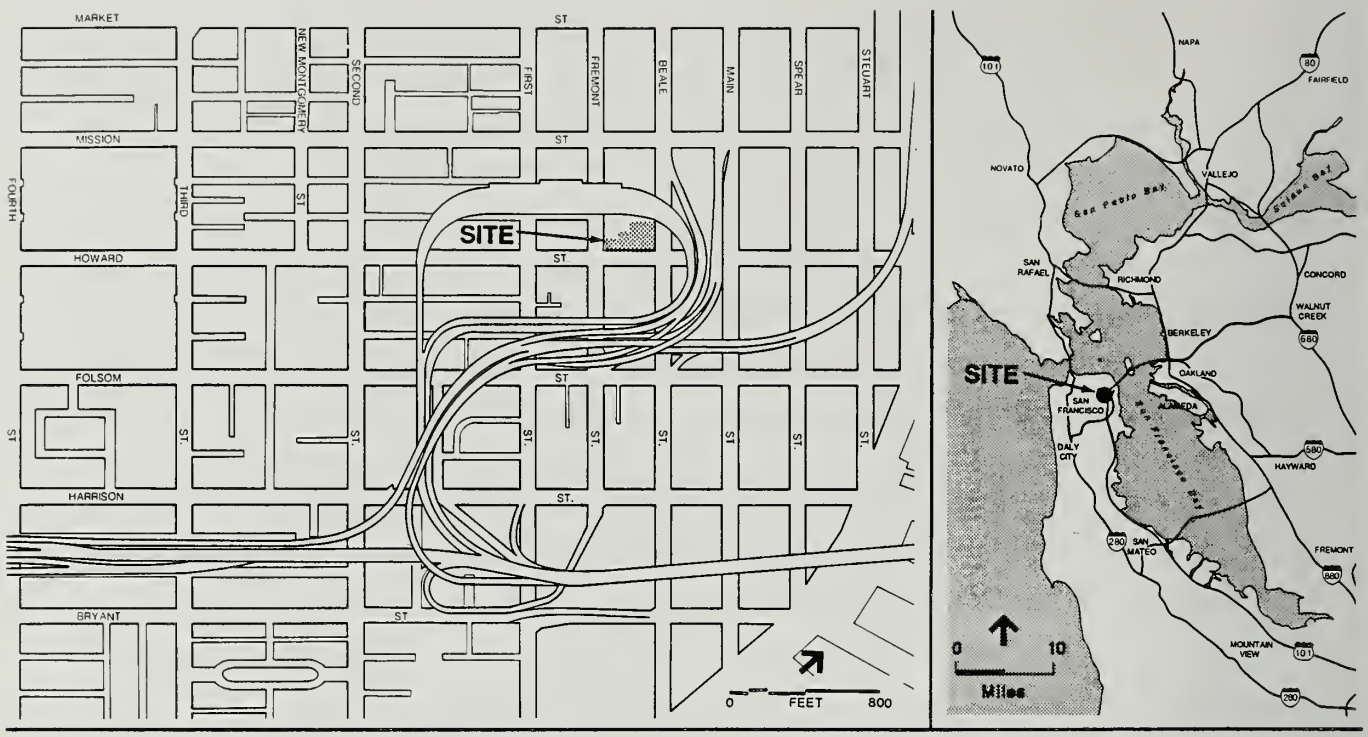
Bechtel Investments, Inc., proposes to build a 27-story, 350 foot tall (plus one-story 16-foot tall rooftop mechanical level) office and retail building at the northwest corner of the intersection of Howard and Beale Streets. The project sponsor's objectives are to develop high quality office and retail space at one of the City's emerging prime office space locations with excellent transportation access. Other objectives include the rehabilitation of the Marine Electric Company Building and the provision of exterior open space. The project architect is The Architects Collaborative, Inc. of San Francisco.

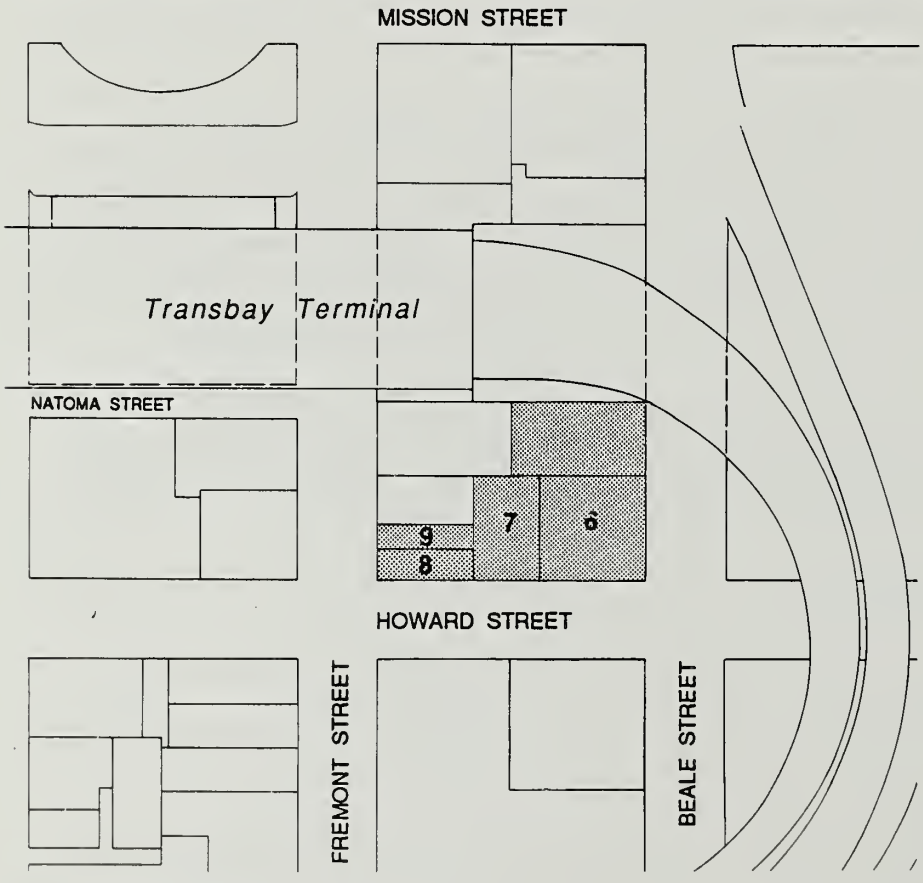
B. PROJECT LOCATION

The proposed project would be located at 300 Howard Street, at the northwest corner of the intersection of Howard and Beale Streets. The 35,003 square foot (sq. ft.) project site is located on Lots 5, 6, 7, 8 and possibly Lot 9 of Assessor's Block 3719./1/ The project site is bounded by Beale Street, Howard Street, Fremont Street, and elevated ramps serving the Transbay Transit Terminal (see Figure 1). The project site contains a 29,170 sq. ft. attendant-controlled surface parking lot with tandem parking for approximately 180 vehicles, a three-story building known as the Marine Electric Company Building located at 342 Howard Street, and may contain a 2,500 sq. ft. vacant lot located on Lot 9 of Block 3719 (the former site of the Fremont House Restaurant which was damaged in the October 1989 earthquake). The site is in the C-3-0 (SD) (Downtown Office, Special Development) Use District and the 350-S Height and Bulk District.

C. PROJECT CHARACTERISTICS

Project characteristics are summarized in Table 1 on p. 19. The project would consist of the construction of a new office tower, the renovation of the Marine Electric Company Building, and the development of open space on the project site. The office tower would be constructed on the existing parking lot and would be a 27-story, approximately 350 foot tall (plus one-story, 16 foot roof-top mechanical level) office and retail building containing a total of about 500,620 sq. ft. of which approximately 394,240 sq. ft. would count towards gross floor area (gfa) under Section 102.9 of the City Planning Code. Gross floor area is the area of the building applicable to floor area ratio (FAR) calculations. It is the unit of floor area measurement used in the





LEGEND

PROJECT SITE
Assessor's Block 3719
Lots 5, 6, 7, 8 and 9

0 200
Feet

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 1
Project Location

TABLE 1: PROJECT CHARACTERISTICS

PROPOSED USES	GROSS FLOOR AREA (sq. ft.)/a/ New Office Tower	Marine Electric Building	Total Project	TOTAL PROJECT AREA (sq. ft.)
Subsurface:				
Parking	0	0	0	41,670 /b/
Mechanical / Storage	700	270	970	24,950
Above Grade:				
Retail	1,360	880	2,240	15,300
Lobby and loading	0	0	0	12,120
Office	391,650	3,130	394,780	410,600
Mechanical Penthouse	530	0	530	8,190
TOTAL	394,240	4,280	398,520	512,830

TOTAL FAR AREA: 398,520 sq. ft.

TOTAL ON-SITE OPEN SPACE: 8,600 sq. ft.

NEW OFFICE TOWER (New Construction)

NUMBER OF STORIES /c/

Retail/Lobby/Loading	1
Office	26
Total Stories	27 /c/
Site Size:	35,003 sq. ft.

HEIGHT AND BULK MEASUREMENTS (ft.) AND FAR

	Allowable	Proposed
Height	350/d/	350/e/
Lower Tower		
Length	160	155
Diagonal	190	170
Upper Tower		
Length	130	130
Diagonal	160	145
Volume Reduction	27%/f/	29%
FAR	6:1 / 18:1 /g/	11.4:1 /g/

/a/ Gross floor area is the area of the building applicable to Floor Area Ratio (FAR) calculations. It is the unit of floor area measurement used in the Proposition M Annual Office Development Limitation Program that expresses the amounts of office space that can be developed in any given year in San Francisco. In Section 102.9(b)1-16 of the City

(Continued)

TABLE 1: PROJECT CHARACTERISTICS (Continued)

Planning Code, exclusions from gross floor area in the C-3-0 (SD) district are defined. Examples are convenience, retail and personal service space and pedestrian circulation and building service space located on ground floor and mezzanine levels (not to exceed 75% of ground floor interior and open space areas), and mechanical and building storage space.

/b/ With entry and exit ramps excluded, there would be about 27,870 sq. ft. of parking space (seven percent of the gross floor area of the project). Under Section 204.5(c) of the City Planning Code, parking area up to seven percent of the gross floor area of the building may be considered accessory parking and excluded from the FAR calculation.

/c/ Excluding two subsurface levels (containing parking, mechanical and storage space) and the rooftop mechanical penthouse.

/d/ The project site is located in the 350-S Height and Bulk district. Under City Planning Code Section 263.9, additional height up to ten percent (to 385 ft.) may be allowed, provided the volume of the upper tower extension (above 350 ft.) is reduced.

/e/ Excluding 16-foot tall rooftop mechanical penthouse; mechanical penthouses up to 16 feet tall are exempt from height calculations under Section 206(b)(1)(A) of the City Planning Code.

/f/ The volume reduction applies over 160 ft.; 27% is the minimum required.

/g/ The basic Floor Area Ratio (FAR) limit for the site is 6:1. Section 128 of the City Planning Code provides for the transfer of development rights (TDR) for the project site allowing FAR to be increased up to a maximum of 18:1. The project proposes TDR of 188,500 sq. ft.

SOURCE: Environmental Science Associates, Inc., and The Architects Collaborative, Inc.

Proposition M Annual Office Development Limitation Program that expresses the amounts of office space that can be developed in any given year in San Francisco. In Section 102.9(b)1-16 of the City Planning Code, exclusions from gross floor area in the C-3-0 (SD) district are defined. Examples are convenience, retail and personal service space and pedestrian circulation and building service space located on ground floor and mezzanine levels (not to exceed 75% of ground floor interior and open space areas), and mechanical and building storage space.

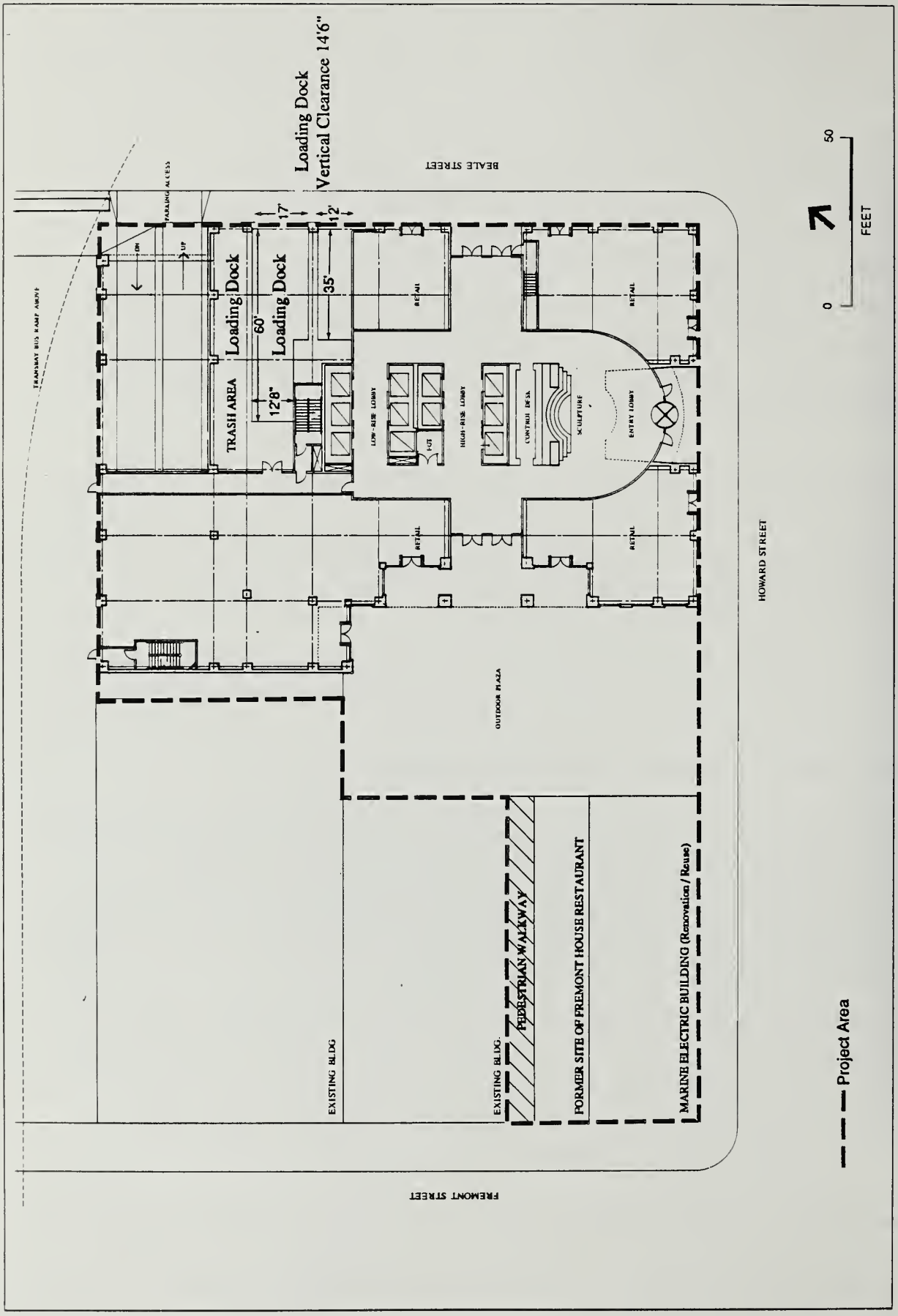
The new office tower would contain approximately 391,650 sq. ft. of office area that would count towards the project's gross floor area. The new office tower would also contain approximately 41,670 sq. ft. of parking including ramps (27,870 sq. ft. excluding ramps; about 130 tandem valet spaces) on two subsurface levels; about 9,350 sq. ft. of retail space on the ground floor; and about 30,050 sq. ft. of storage and mechanical area in the basement and a rooftop mechanical penthouse. Of these non-office uses, about 2,590 sq. ft. would count towards the project's gross floor area.

The project site plan showing the relationship between the office tower, the Marine Electric Company Building and the project's open space is shown in Figure 2. Floor plans and elevations of the office tower are shown in Figures 3 through 6, pp. 23 to 26. The ground floor retail and lobby area of the new office tower would open onto Howard Street, Beale Street, and 8,600 sq. ft. of exterior open space that would be developed on Lots 7 and, if acquired, Lot 9. If Lot 9 (the former Fremont House site) were not acquired by the project sponsor, the remainder of required open space would be provided on a second-level podium at the rear of the site adjacent to the office tower. The open space would consist of a T-shaped park containing landscaping and seating areas, and would be adjacent to an additional 800 sq. ft. of open walkway area. The ground floor would also contain two full-size truck loading docks with access from and exit onto Beale Street. Four van loading spaces would be located in the subsurface parking level, which would also be accessed from Beale Street.

The base of the office tower, as defined by the Downtown Plan (height not to exceed 1.25 times the width of the widest abutting street, Howard Street), would include floors one through seven, and would be built to a height of about 95 feet. The lower tower would be floors eight through seventeen with an average floor size of about 16,590 sq. ft. The upper tower would begin at the18th floor, with an average floor size of about 11,700 sq. ft. The building would set back at the eighth level on the north (Transbay Transit Terminal ramp) side, and at the eighteenth level on the east (Beale Street), west (proposed open space), and north (Transbay Transit Terminal ramp) sides. The Howard street elevation would remain flush to the property line. The building would also be set back at the eighth level at all building corners.

The Marine Electric Company Building is designated as a Category III (contributory) Building in Appendix C to Article 11 of the San Francisco City Planning Code and referenced in the San Francisco Downtown Plan. This building currently contains 3,300 sq. ft. of ground floor restaurant use and 6,600 sq. ft. of upper floor vacant space. This building would be rehabilitated as part of the proposed project and would contain approximately 12,210 sq. ft., of which about 4,280 sq. ft. would count towards gross floor area. The building would contain approximately 3,130 sq. ft. of office area that would count towards the project's gross floor area. The building would also contain about 5,950 sq. ft. of restaurant space on the ground floor and second level mezzanine, and about 3,090 sq. ft. of basement storage and maintenance space. Of these non-office uses, about 1,150 sq. ft. would count towards the project's gross floor area.

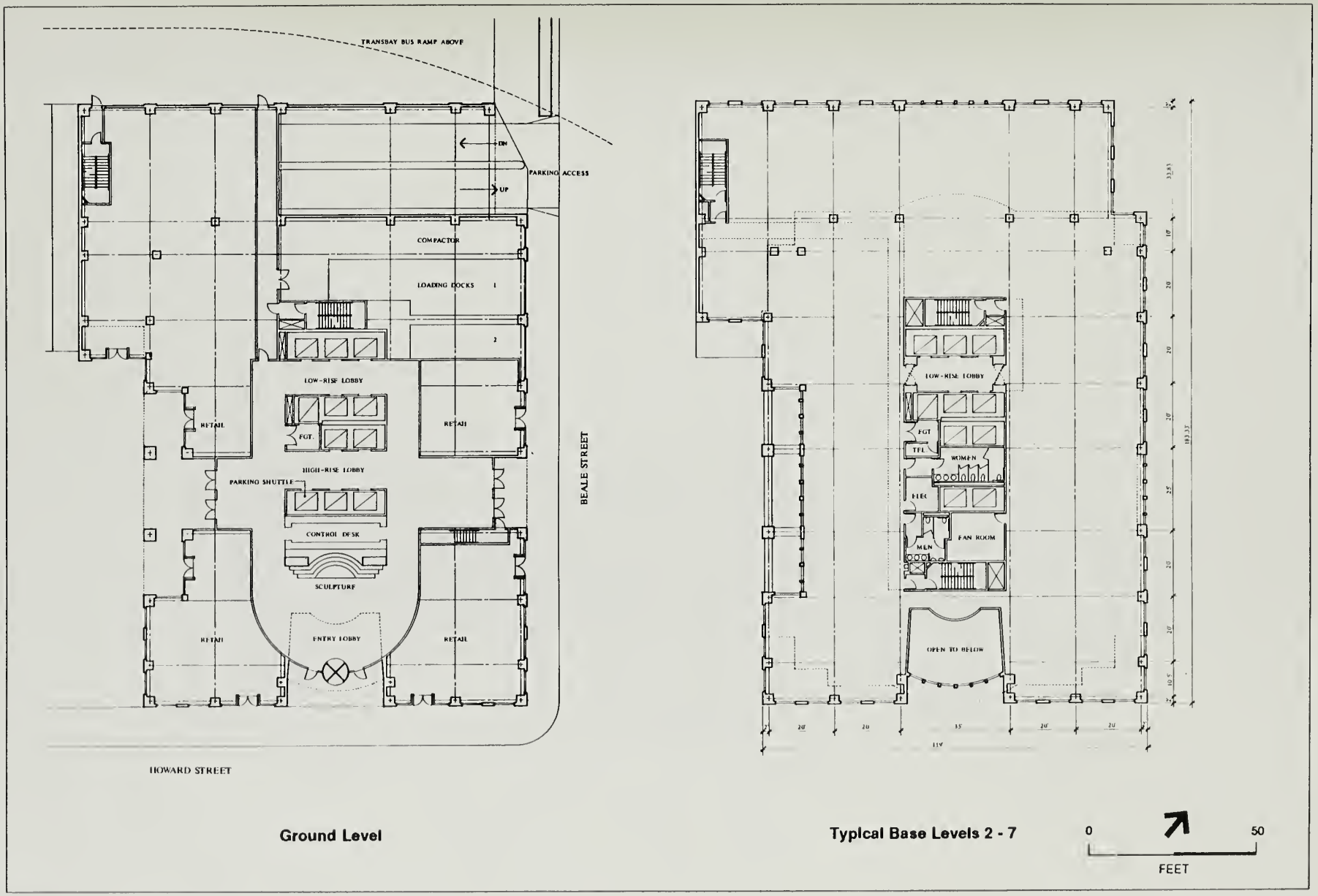
The proposed project, including both the new office tower and the Marine Electric Company Building, would contain a total of about 512,830 sq. ft., of which approximately 398,520 sq. ft. would be applicable to the project's floor area ratio (FAR) as calculated under the City Planning Code.



300 Howard Street ■

Figure 2
Project Site Plan

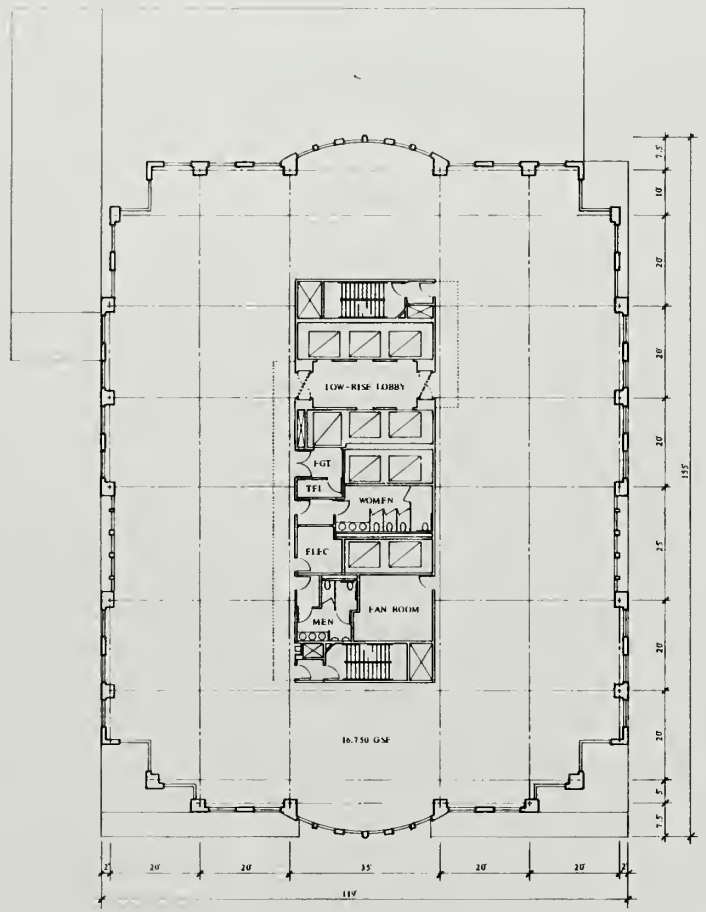
SOURCE: T.A.C.



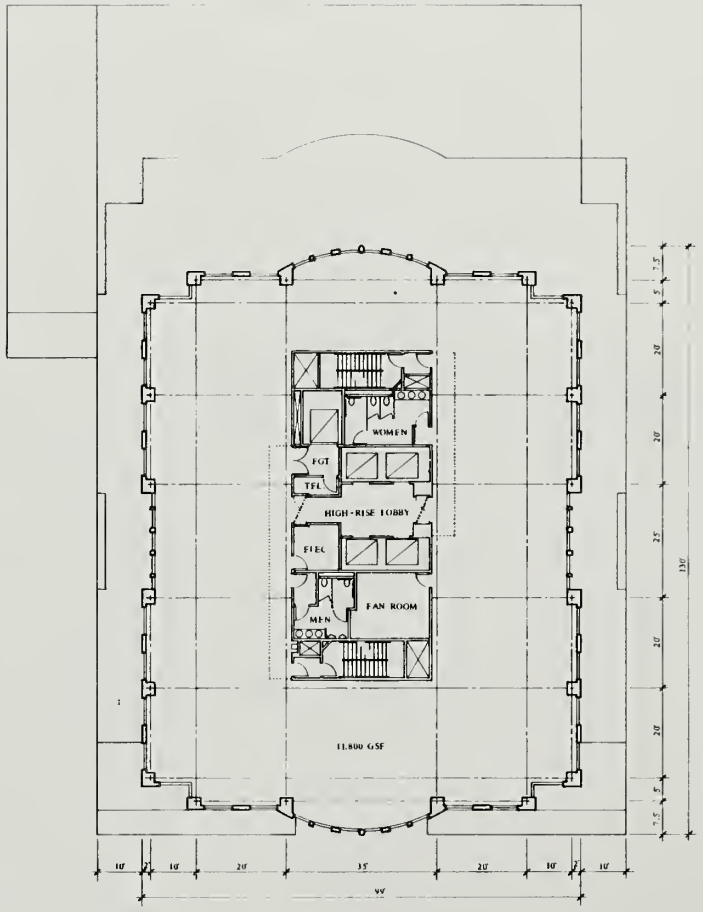
SOURCE: TAC

300 Howard Street ■

Figure 3
Office Tower Ground Floor and
Typical Building Base Floor Plans



Typical Lower Tower Levels 8 - 17



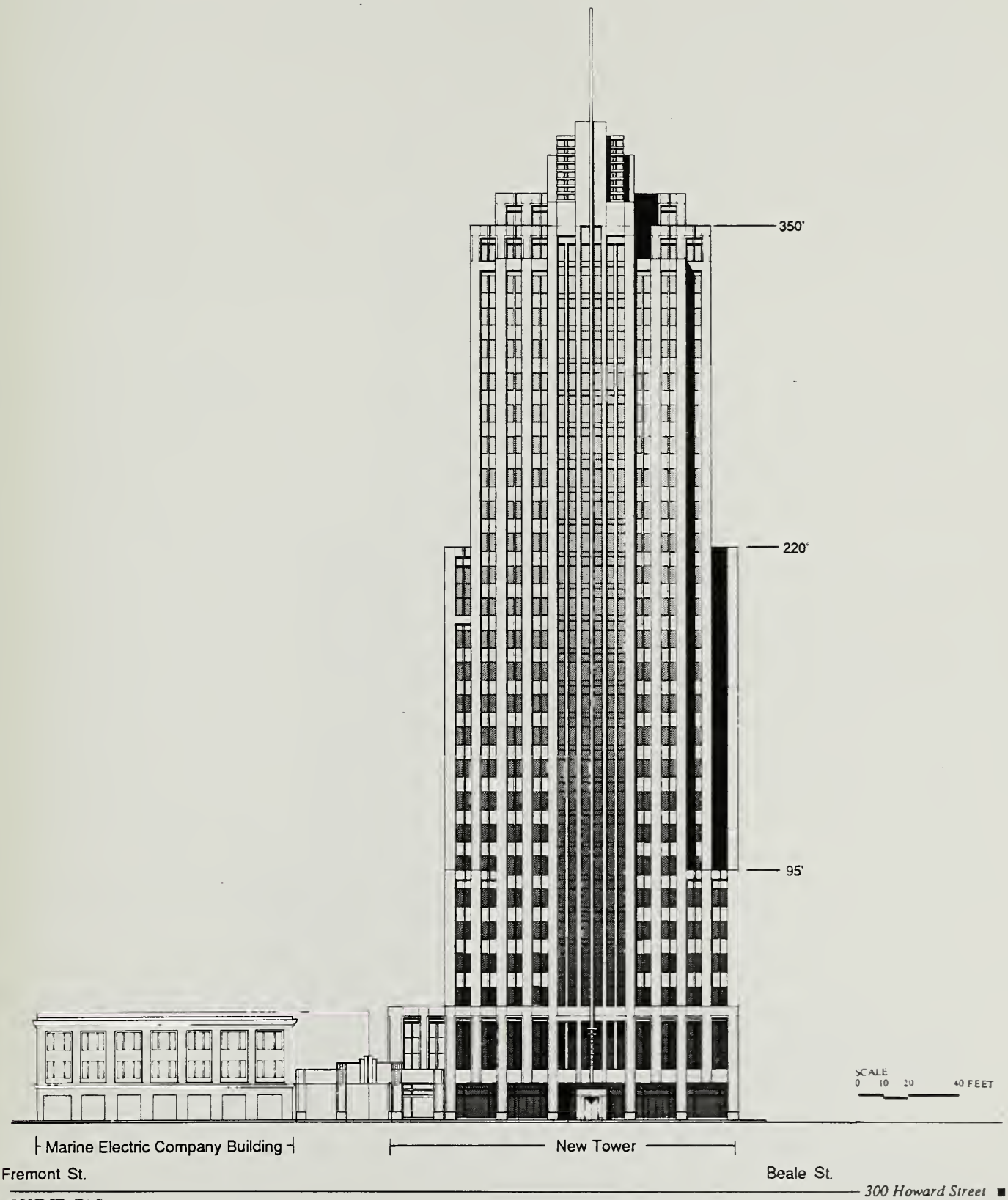
Typical Upper Tower Levels 18 - 27

0 50
FEET

SOURCE: TAC

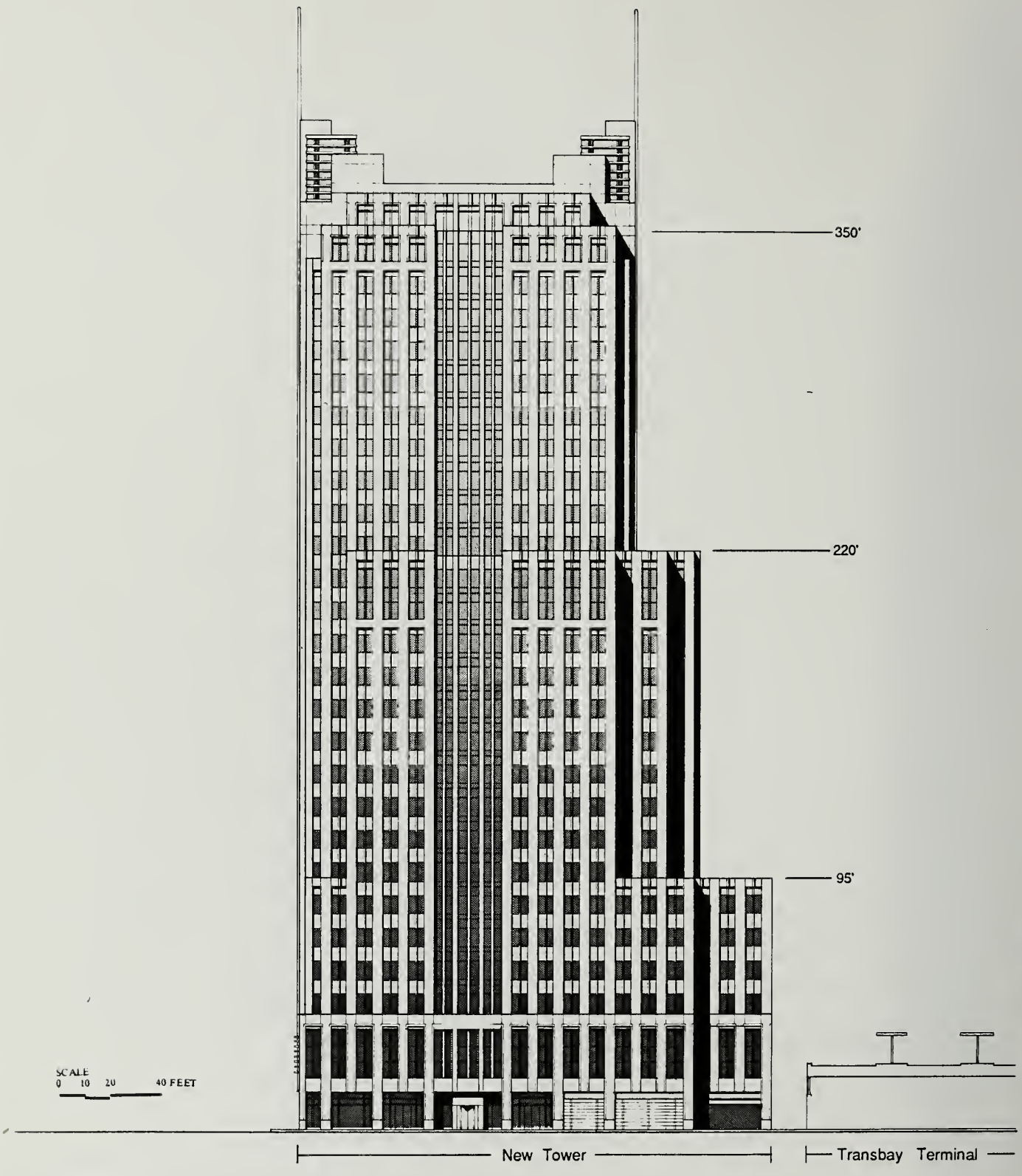
300 Howard Street ■

Figure 4
Typical Lower Tower and Upper Tower Plans



SOURCE: TAC

Figure 5
Howard Street Elevation



300 Howard Street ■

SOURCE: TAC

Figure 6
Beale Street Elevation

The site is in the C-3-0 (SD) (Downtown Office Special Development) Use District and the 350-S Height and Bulk District. The basic permitted FAR for the site is 6:1. Development up to a maximum FAR of 18:1 is allowable through the Transfer of Development Rights (TDR) from sites in any C-3 district (because the project is in the C-3-0 (SD) district) that contain architecturally significant buildings with unused potential floor area. The FAR of the project would be about 11.4:1 on the 35,003 sq. ft. site, and would require approximately 188,500 sq. ft. of TDR. The project sponsor has not yet identified buildings from which development rights would be sought. The overall FAR for the development and preservation lots would be 6:1, if both the development and preservation sites were in the same Use District.

The project would require the removal of the existing 29,170 sq. ft. parking lot. The two employees presently working at the parking lot would be displaced. In addition, the four employees presently employed in the Marine Electric Company building would be displaced by the project. The project would also replace the 2,500 sq. ft. vacant lot (the former site of the Fremont House restaurant), if acquired, with open space. Assuming the Fremont House site were acquired, total net changes in floor area for the site would result in an increase of about 410,600 sq. ft. of office space (of which about 394,780 sq. ft. would count towards gross floor area), an increase of about 12,000 sq. ft. of retail (including restaurant) space (of which about 790 sq. ft. would count towards gross floor area), and an addition of about 8,600 sq. ft. of outdoor open space. There would be a decrease of about 50 parking spaces. Office use and open space would be new uses to the site. The project would meet requirements established by the Downtown Plan and incorporated into the City Planning Code which provide for art displayed within the project, off-site open space in the downtown area through the Downtown Park Fund, and provisions for child care facilities in a manner to be determined.

D. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

PROJECT SCHEDULE AND COST

The project sponsor expects environmental review, project review and preliminary design to be completed in mid 1991. If the project were approved and building permits issued, construction would take about 18 to 20 months with interior finishing thereafter. Initial occupancy is anticipated about 22 months from the start of construction. Estimated construction cost of the project would be about $47,850,000 (1989 dollars), including excavation, building shell and interior improvements.

APPROVAL REQUIREMENTS

Following a public hearing before the City Planning Commission on the Draft EIR, responses to written and oral comments will be prepared. The EIR will be revised as appropriate and presented to the City Planning Commission for certification as to accuracy, objectivity and completeness. No permits may be issued before the Final EIR is certified.

The Office Growth Limitation Ordinance (Ordinance No. 414-85 approved September 10, 1985 by the Board of Supervisors, signed by the Mayor September 17, 1985, and effective October 17, 1985) limited growth in the form of major office developments (over 50,000 sq. ft.) in San Francisco to a total of 2.85 million sq. ft. over a period of three years (an average of 950,000 sq. ft. per year). This includes office development citywide and encompasses development by the Redevelopment Agency, the Port of San Francisco and State and Federal agencies. In accord with the ordinance, the project would be subject to review and approval under City Planning Code Section 321, Office Development: Annual Limit.

On November 14, 1986, the voters of San Francisco passed Proposition M, the Accountable Planning Initiative. It amends Section 320(g)(1) of the City Planning Code to lower the threshold for office projects subject to the annual limit from 50,000 sq ft. to 25,000 sq. ft. of additional office space. Since the proposed project would add office space in excess of 25,000 sq. ft., it is now subject to the provisions of Planning Code Sections 320 - 325 as amended by Proposition M. Proposition M also adds Section 321.1 to the City Planning Code, and changes the limitation amount from 2.85 million sq. ft. of office space over three years to 950,000 sq. ft. in each one-year period. Section 321.1 requires the adjustment of the 950,000 square foot annual limit by limiting new office space approvals to 475,000 sq. ft. annually until the total amount of space approved since November 29, 1984, is reduced to zero in annual increments of 475,000 sq. ft. Up to 448,300 sq. ft. in larger office projects (50,000 sq. ft. or greater) may be approved during the approval period ending October 1991, including about 48,300 sq. ft. remaining from the 1989-1990 approval period, and about 400,000 sq. ft. available from the 1990-1991 approval period.

Proposition M also establishes eight Priority Policies. These policies are: preservation and enhancement of neighborhood-serving retail uses; protection of neighborhood character; preservation and enhancement of affordable housing; discouragement of commuter automobiles; protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; earthquake preparedness;

landmark and historic building preservation; and protection of open space. Prior to issuing a permit for any project which requires an Initial Study under CEQA or adopting any zoning ordinance or development agreement, the City is required to find that the proposed project or legislation is consistent with the Priority Policies. The City Planning Commission, in its decision regarding the proposed project approval or disapproval would make a determination of the project's conformance with the Priority Policies.

Under Sections 321 and 322 of the City Planning Code, the project would be evaluated and compared with other proposed projects being considered in the same approval period, based on criteria set forth in Section 321(b). The criteria include, among other issues, consideration of the project's contribution to and effects on objectives and policies of the Master Plan; the quality of the design of the development; the anticipated uses of the development; the suitability of the project for its location; and the use of TDR by the project sponsor. The project would also require approval under Section 309 of the City Planning Code, Permit Review in C-3 Districts, which governs the review of project authorization and building and site permit applications in C-3 districts. Under Section 309, the City Planning Commission would evaluate the project's provision of artwork (Planning Code Section 149) and open space (Planning Code Section 138).

As noted above, the project would be reviewed by the City Planning Commission in the context of applicable objectives and policies of the San Francisco Master Plan. Some of the key objectives and policies are noted here. Objective 2 of the Commerce and Industry Element encourages development to "maintain and enhance a sound and diverse economic base and fiscal structure for the City."/2/ Objective 2 of the Downtown Plan Element encourages development in the Downtown to "maintain and improve San Francisco's position as prime location for financial and administrative, corporate and professional activity."

Other objectives and policies include Objective 1, Policy 7 of the Transportation Element, to "seek means to reduce peak travel demand;" Objective 1, Policy 6 of the Transportation Element, to "develop a financing system for transportation in which funds may be allocated without unnecessary restriction for priority improvements according to established policies;" Policy 3 of Objective 18 in the Downtown Plan which discourages provision of new long-term commuter parking spaces in and around downtown and states that replacement of long-term parking spaces lost in the downtown should occur in areas peripheral to the downtown commercial district; Policy 2 of Objective 20 of the Downtown Plan which seeks to organize and control traffic circulation in the downtown core by channeling vehicles into peripheral parking facilities; and Policy 7 of Objective 20 of the Downtown Plan which encourages conversion of existing parking

facilities to short-term use, rate structures which favor short-term parking, and states that additional short-term parking facilities should be located in the designated parking belt outside the downtown core. The Urban Design Element of the Master Plan also contains objectives which, among other considerations, would be used to evaluate the design of the proposed project.

The project sponsor would request project authorization from the City Planning Commission pursuant to Sections 321-322 and 309. The City Planning Commission would hold a public hearing to consider the project application, and would adopt a motion approving, approving with conditions, or disapproving the project./3/ If the project were to be approved by the City Planning Commission, the project sponsor must obtain building and related permits from the Central Permit Bureau of the Department of Public Works. An application for a Site Permit for the project has not been filed to date.

Section 1111.6 sets forth standards for the alteration of buildings designated as significant or contributory in Article 11 of the City Planning Code. Proposed alterations to the Category III (contributory) Marine Electric Company building would be reviewed pursuant to those standards. Review includes referral to the Landmarks Preservation Advisory Board (LPAB) for a recommendation to the City Planning Commission, which may approve, disapprove, or approve with conditions the alteration application. For significant or contributory buildings, Section 1111.6 states that the distinguishing original qualities or character of the building may not be damaged or destroyed and that any distinctive architectural feature which affects the overall appearance of the building shall not be removed or altered unless it is the only feasible means to protect the public safety.

NOTES - Project Description

/1/ The project sponsor is currently negotiating for the acquisition of Lot 9 of Assessor's Block 3719. If acquired, Lot 9 would be developed as a portion of the project's open space. If Lot 9 were not acquired, required open space would be provided on a second-level podium at the rear of the site adjacent to the office tower.

/2/ San Francisco Department of City Planning, January 1983, *Commerce and Industry, an Element of the Master Plan*, and *Downtown Plan, an Area Plan of the Master Plan.*

/3/ The San Francisco City Planning Code (Section 309(h)) requires a public hearing before the City Planning Commission for all projects exceeding 50,000 sq. ft. of net new area.

A. LAND USE AND ZONING

LAND USE

The project site is on the northwest corner of the intersection of Howard and Beale Streets. The site is located adjacent to the Transbay Transit Terminal, two blocks south of Market Street and two blocks north of the James Lick Freeway (I-80). The site contains a three story building which is vacant except for a ground floor restaurant, a paved surface parking lot which accommodates approximately 180 vehicles under a valet park system, and a vacant lot which is the former site of the Fremont House restaurant which was damaged in the October 1989 earthquake.

Office, retail and service uses occupy older buildings in the vicinity, while newer buildings in the surrounding area contain office uses and some ground floor retail uses. To the northwest of the site on the project block are two low scale (five and eight story) office buildings with ground floor retail use, and surface parking and retail use under elevated ramps to the Transbay Transit Terminal. Across the project site on Howard Street are two office buildings, the five story 215 Fremont Building and the recently completed 22 story 301 Howard Building. To the southeast of these office buildings is the Golden Gate Transit Bus lot.

On the block to the east across Beale Street from the site are surface parking lots underneath elevated ramps serving the Transbay Transit Terminal, a restaurant, and the 33 story Pacific Gateway Office Building. The block to the west of the project site (across Fremont Street) contains surface parking lots, a two story building housing wholesale use, and the Transbay Transit Terminal. The block to the southwest of the site is lined with one- to three-story buildings housing retail and wholesale uses. To the north, along Mission Street, are older office and warehouse type buildings housing primarily office, furniture, and printing and photography uses.

Through conversion and new construction, the site area which has historically supported printing, wholesaling and light-industrial uses, is becoming increasingly office oriented with more office

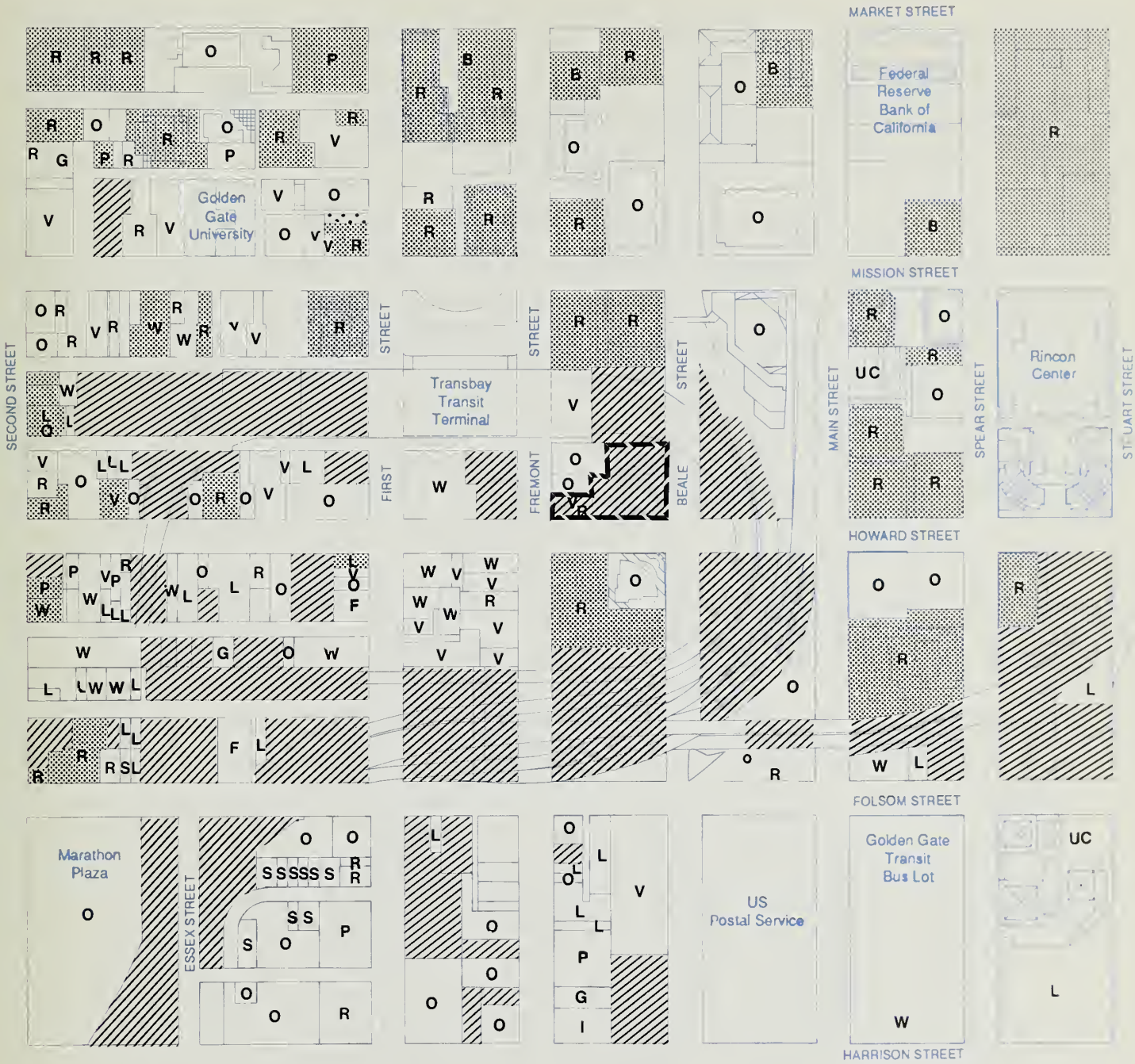
and office support uses, although examples of the original use types remain. The area differs from the financial district in density, diversity of use and scale of development. Land uses in the project site vicinity are shown in Figure 7.

Located in the vicinity of the project are the sites of office buildings recently completed, under construction or approved. These include: 71 Stevenson, 49 Stevenson, 100 First Street, 90 New Montgomery Street, and 455 Market Street, all recently completed developments north of Mission Street. The 75 Hawthorne Street and Marathon Plaza buildings were recently completed south of Howard Street. In addition, the 222 Second Street, 524 Howard Street, 101 Second Street, and 299 Second Street office developments have been approved by the City Planning Commission.

South of Harrison Street, uses consist primarily of warehouses, maritime-related services, clothing manufacturers and discount outlets, auto repair shops and some residential development. The area generally to the south and west of the project site is included in the South of Market (SOM) Plan. The SOM Plan is an area plan within the City's Master Plan. Goals of this area plan include protecting the existing economic, social and cultural diversity; preserving existing housing and encouraging development for new affordable housing; protecting and facilitating the expansion of industrial artisan, service and neighborhood-serving retail activities; and preserving existing amenities and improving neighborhood livability.

ZONING

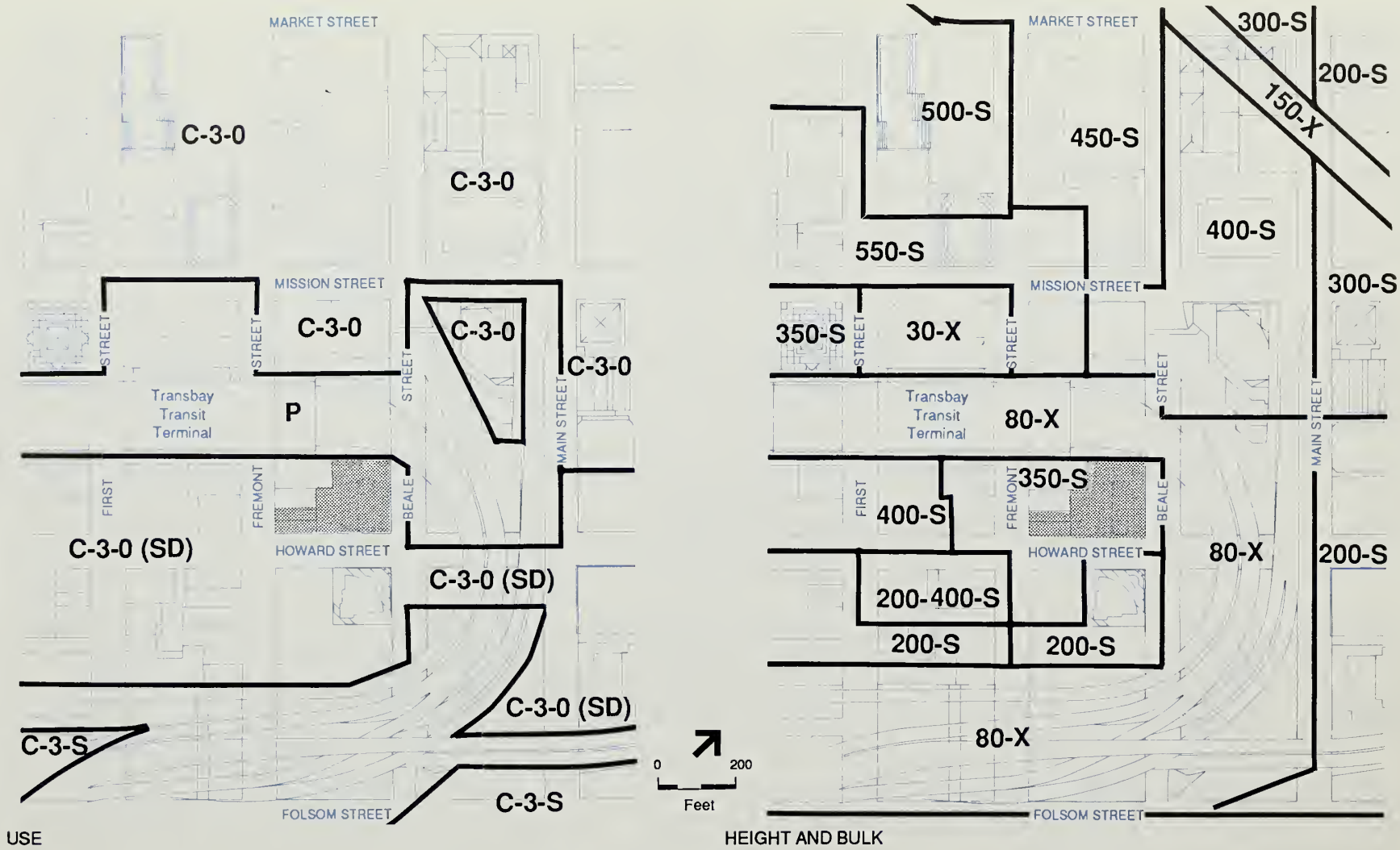
The project site is in the C-3-0 (SD) Downtown Office Special Development District (see Figure 8, p. 34). This special district is identified in the Downtown Plan and City Planning Code as an area for growth redirected from North of Market and for receiver sites for transferable development rights (TDR). The predominant permitted uses in this zoning district are office, with retail and services. Development is permitted with a basic Floor Area Ratio (FAR) of 6:1. In the C-3-0 (SD) district development greater than the basic 6:1 FAR, up to a maximum of 18:1 FAR, is allowable through TDR from sites in the same zoning district, the C-3-0 district, and C-3-R district that include architecturally significant buildings with unused potential floor area. All unused area applicable to the FAR of the preservation site could be transferred to a development lot subject to setback, sunlight access, separation between towers and any other limitations pursuant to City Planning Code Section 309, Permit Review in C-3 Districts. Except for the provision that TDR may be transferred to sites within the C-3-0 (SD) district from sites outside the district, and the 6:1 basic FAR, C-3-0 (SD) district zoning provisions are identical to those of the C-3-0 Downtown Office district.



SOURCE: Downtown Plan; Splendid Survivors; San Francisco Department of City Planning; Environmental Science Associates, Inc.

300 Howard Street ■

Figure 7
Land Use Map



SOURCE: San Francisco City Planning Code

300 Howard Street ■

Figure 8
Planning Code Use Districts and Height and Bulk Districts

Zoning in the site vicinity includes P (Public Use) northwest and northeast of the site (the Transbay Transit Terminal and related areas) and C-3-0 (SD) to the south. The Downtown Plan and the City Planning Code identify the project area as appropriate for growth redirected from the North of Market area, as indicated by the height and bulk designations for these areas.

The site is in the 350-S Height and Bulk district in which the allowable height is 350 ft. (see Figure 8, p. 34). In the S bulk district, the maximum length and maximum diagonal dimension of the lower tower are 160 ft. and 190 ft., respectively. The maximum floor size is 20,000 sq. ft. For the upper tower the bulk controls are: a maximum length of 130 ft.; a maximum average diagonal dimension of 160 ft.; and a maximum floor size of 17,000 sq. ft. Allowable exceptions to these bulk maximums are provided in Section 272, subject to approval under Section 309. Ten percent of permitted building height is allowed above the height limit upon further reduction in the volume of the upper portion of the tower. Thus, in the 350-S district, the maximum allowable height is 385 ft.

The City Planning Code (Section 132.1(c), Separation of Towers) requires a 15-ft. setback from interior property lines, or center of street; exceptions to this setback requirement could be requested under the provisions of Section 309.

Off-street parking is not required for commercial uses in the C-3-0 (SD) district, and long-term parking is discouraged by the Master Plan. According to Section 204.5(c) of the City Planning Code, up to seven percent of the gross floor area of a building may be devoted to parking as an accessory use when no parking is required. In C-3 Districts, off-street loading and service vehicle spaces are required as follows: 0.1 spaces per 10,000 sq. ft. of office use (to the closest whole number); loading spaces for retail use are not required when the area of retail use applicable to the project's gross floor area is 10,000 sq. ft. or less (City Planning Code, Section 152.5, Table 152.5). Downtown office development is subject to the Transit Impact Development Fee (TIDF, Ordinance 224-81, San Francisco Administrative Code Section 38), which requires a project sponsor to contribute a one-time fee for maintaining and augmenting transportation service in an amount proportional to the demand created by the project.

Open space is required for commercial uses in the C-3-0 (SD) district in a 1:50 ratio of open space to uses with open space requirements, as per Section 138(a) and (b) of the City Planning Code; and contribution of $2.00 for each net new gross sq. ft. of office use to the Downtown Park Fund (Section 139(d)). The open space provided must meet minimum standards as defined by Section 138(d) of the Code.

DOWNTOWN EXTENSION OF THE PENINSULA COMMUTE SERVICE

The project site would be affected by two alternative terminal locations for the proposed extension of the Peninsula Commute Service (PCS) into downtown San Francisco. The Downtown San Francisco PCS Extension is under formal planning and environmental review by the Peninsula Corridor Study Joint Powers Board (JPB) consisting of various transportation representatives from Santa Clara, San Mateo and San Francisco Counties, Caltrans, and the Metropolitan Transportation Commission. A Draft EIS is being prepared for that project, which will evaluate three alternatives for extending PCS service downtown. Alternatives 5A and 5B would include an underground station on the northside of Howard Street from west of First Street to Beale Street. These alternatives are still under study, and there are no final plans for the project. The Draft EIS is projected to be available for public review in 1991./1/

NOTE - Land Use and Zoning

/1/ Brian Kennedy, Senior Planner, Public Affairs Management, telephone conversation, October 23, 1990.

B. ARCHITECTURAL AND HISTORIC RESOURCES

The project site contains one structure, the three-story 342 Howard Street building, known as the Marine Electric Company Building. The remainder of the site is covered by a paved surface parking lot and a vacant lot. Numerous buildings of architectural and historic significance in the site vicinity have been inventoried by three architectural surveys.

The San Francisco Department of City Planning (DCP) conducted a citywide inventory of architecturally significant buildings in 1976. In the 1976 DCP Architectural Inventory, approximately ten percent of the City's entire stock of buildings was awarded a rating for architectural merit ranging from a low of "0" to a high of "5." The buildings which were rated from "3" to "5" represent the highest two percent of the City's entire building stock.

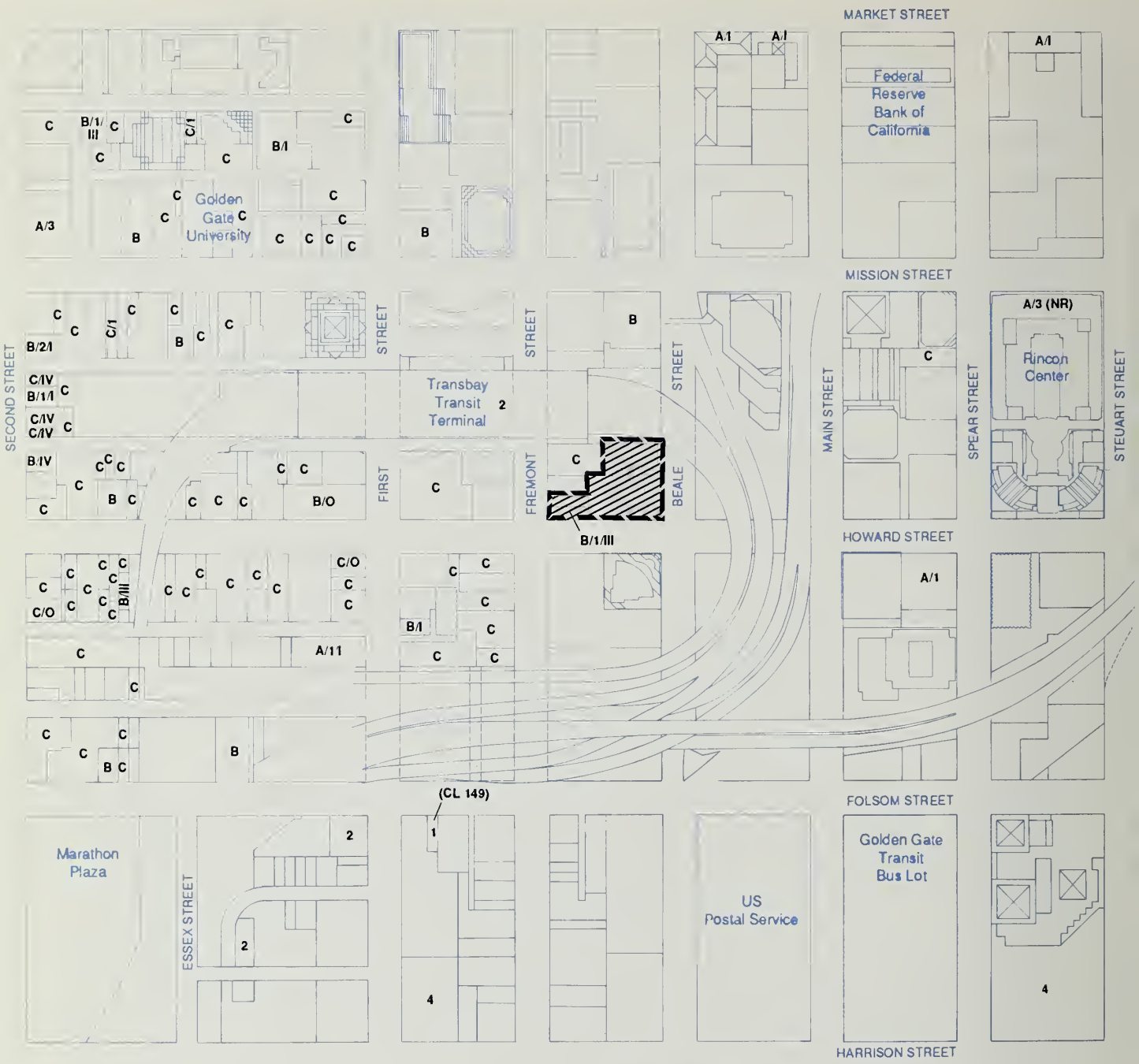
The Foundation for San Francisco's Architectural Heritage conducted a survey which assigned ratings to buildings in the C-3 District. The survey rated buildings from "A" (Highest Importance) to "D" (Minor or No Importance). The criteria used in the evaluation were based on guidelines of the National Trust for Historic Preservation, the National Register of Historic Places, and the State Historic Resources Inventory.

The Downtown Plan categorizes historically and architecturally significant buildings into either Category I or II (significant buildings) or Category III or IV (contributory buildings). It is the intent of the Downtown Plan that those buildings categorized I, II, III or IV are to be protected within the C-3 area. Appendix B, pp. A.31-34, contains further explanation of the rating systems used by each of these three architectural inventories.

Figure 9 identifies buildings in the project area that are landmarks and/or are included in (1) the 1976 Department of City Planning Architectural Inventory, (2) the Heritage Survey, and/or (3) the Downtown Plan. Figure 9 also identifies City landmarks and structures of merit, as designated by Article 10 of the City Planning Code, in the vicinity of the project site. Landmarks near the project site include the Edwin Klockars Blacksmith Shop at 449 Folsom Street (City Landmark #149) approximately one block south of the project site, and the Rincon Annex Post Office at 55 Mission Street, three blocks east of the project site, which is listed on the National Register of Historic Places. The Rincon Annex Post Office also received a DCP "3" rating and a Heritage "A" rating.

The three-story Marine Electric Company building on the project site was built in 1907; the architect is Emil John (see Figure 11, p. 41). This two-part industrial building with light Renaissance Revival ornamentation is capped by a cornice of galvanized iron. It is representative of the maritime-oriented architecture once common in industrial neighborhoods of San Francisco. This building is listed as a Category III - Contributory Building in the Downtown Plan survey. Category III includes buildings which are at least 40 years old, judged to be of individual importance, and are rated either very good in architectural design or very good in relationship to the environment. This building is also rated "B" by the Heritage survey; "B" ratings are assigned to buildings considered to be of major importance which tend to stand out for their overall quality rather than for any particular outstanding characteristics. The Marine Electric Company building is rated "1" in the 1976 DCP Inventory.

Other buildings in the area rated by one or more of these architectural inventories include the Transbay Transit Terminal (DCP "2" rating, one block west); the 500 Howard Street building (Heritage "B" rating, two blocks west); the Phillips Building at 234 First Street (Downtown Plan Category I, DCP "1" rating, Heritage "A" rating, two blocks southwest); the 231 First Street building (Downtown Plan Category I, Heritage "B" rating, one block southwest); and the Folger Coffee Building at 101 Howard Street (Downtown Plan Category I, Heritage "A" rating, two blocks southeast).



B/2/III Heritage / DCP / Downtown Plan
A-C Heritage Rating (1979, C-3 Districts Only)
0-5 DCP Rating (1976, Citywide)
I-IV Downtown Plan (1984, C-3 Districts Only)
(CL 149) City Landmark No.
(NR) National Register of Historic Places Landmark
Project Site

SOURCE: Downtown Plan; Splendid Survivors; San Francisco Department of City Planning; Environmental Science Associates, Inc.

300 Howard Street ■

Figure 9
Architectural Resources in the Project Vicinity

C. URBAN DESIGN

The project site contains one structure, the three-story 342 Howard Street building, known as the Marine Electric Company Building. The remainder of the site is covered by a paved surface parking lot and a vacant lot. The Marine Electric Company Building, built in 1907, is a brick masonry industrial-style building typical of older South of Market development and is designated as a Category III Building in the San Francisco Downtown Plan (see Figures 10 through 12, pp. 40 to 42). The project site vicinity contains a variety of building types, with some older development, particularly to the west, replaced by more modern structures. However, much of the early development remains and a number of older buildings have been renovated. The area contains several surface parking lots which were formerly the sites of buildings.

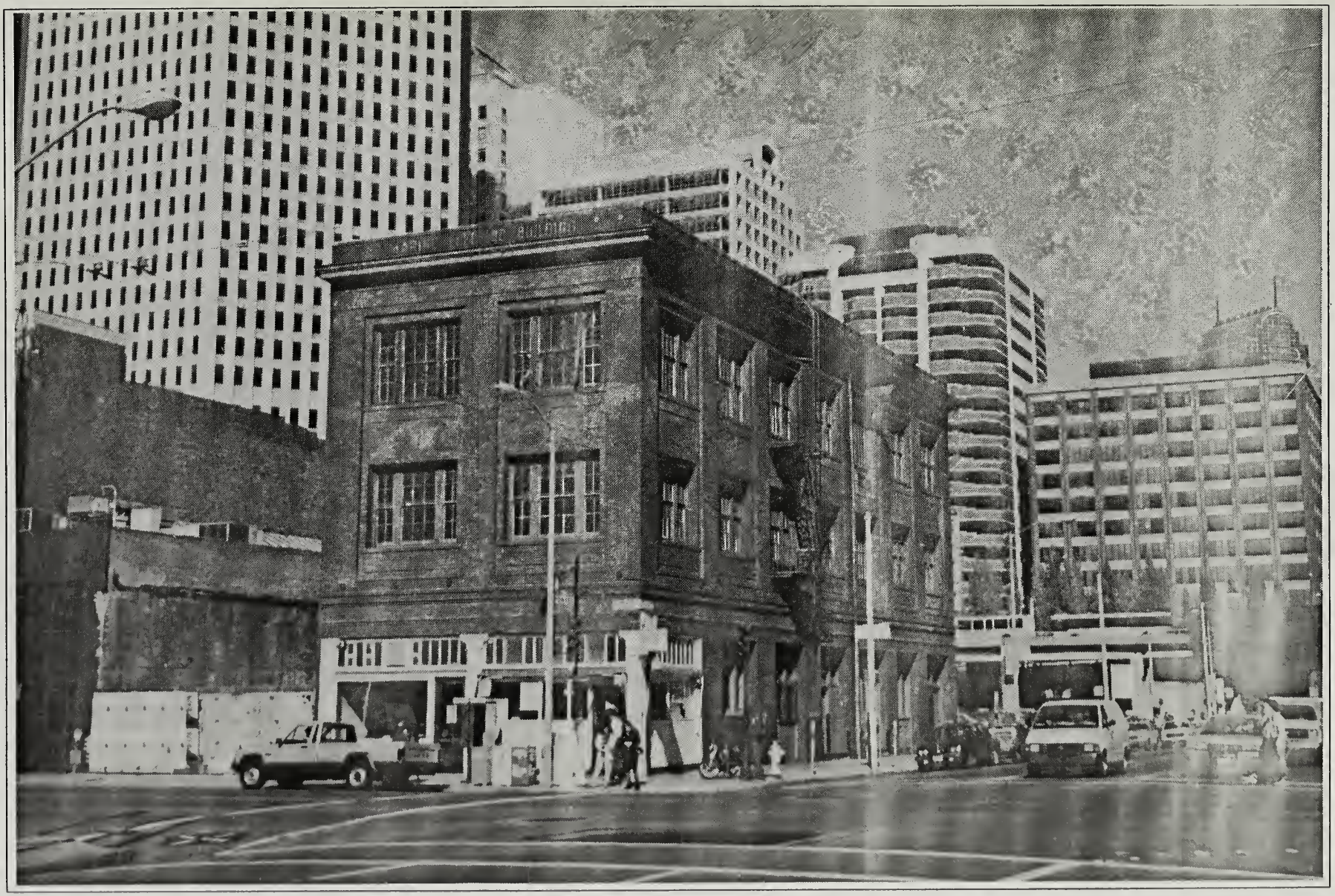
Existing buildings on the project block range from one- to eight-stories in height, with generally light-to-medium colors and facade materials including reddish and tan-colored brick, concrete, and light-colored stone. The 345 Mission Street building, at eight stories, is the tallest building on the project block. The project block is bisected by elevated concrete ramps serving the Transbay Transit Terminal. Across the project site on Howard Street is the recently completed 22-story 301 Howard Street Building, which is finished with dark-colored polished granite, steel and glass. Older buildings to the south and southwest tend to be industrial in design, generally three- to four- stories in height and built to lot lines. More recent development (in the last ten years) in the area generally consists of tall, bulky office buildings with less architectural detail than older development. Some of this more recent development, including the 301 Howard Street building, is set back from lot lines.

Views from the site immediately to the north and east are of elevated ramps serving the Transbay Transit Terminal. Further north, taller buildings along Market Street and in the financial district are visible beyond lower-scale development in the foreground. Further east, highrise office development south of Market Street (particularly between Main and Steuart Streets) is visible beyond the elevated ramps. Views to the south are of the five-story 215 Fremont Street Building and the 22-story 301 Howard Street Building, both located across Howard Street from the project site. To the west, Howard Street provides a relatively open vista.

The building currently on the site is visible only from points within the immediate site vicinity. The building on the site is not generally visible from other locations because of street configurations, intervening high-rise buildings, the elevated transit ramps, and the relatively low scale of development on the site.

SOURCE: Environmental Science Associates, Inc.

Figure 10
View of Site Looking Northwest
Across Howard and Beale Streets



SOURCE: Environmental Science Associates, Inc.

Figure 11
View of Site Looking Northeast
Across Howard and Fremont Streets

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 12
View of Site Looking
North Across Howard Street

D. SHADOW AND WIND

SHADOW

The existing three-story building on the site casts shadows on streets and sidewalks in the project vicinity and on the parking lot on the site. Existing and project shadow patterns for various times of the day and year are discussed in detail in Chapter V, Environmental Impacts, pp. 74 to 88. Sunlight requirements under the City Planning Code for regulated spaces in the site vicinity are discussed on p. 71.

WIND

U.S. Weather Bureau and Bay Area Air Quality Management District data show that westerly (i.e., from the west) to northwesterly winds are the most frequent and strongest winds during all seasons in San Francisco./1/ Of the 16 primary wind directions measured at the Weather Bureau station (at a height of 132 ft.), four directions comprise the greatest frequency of occurrence as well as the majority of strong wind occurrences; these are northwest, west-northwest, west and west-southwest. Calm conditions occur about two percent of the time.

Average wind speeds are highest during summer and lowest during winter months. However, strongest peak winds occur in winter, when speeds of 47 miles per hour (mph) have been recorded./2/ The highest average wind speeds are in the mid-afternoon, and the lowest are in the early morning.

Pedestrian Comfort and Wind Criteria

Wind conditions partly determine pedestrian comfort on sidewalks and in other public areas. In downtown areas, high-rise buildings can redirect wind flows around buildings and divert winds downward to street level; each can result in increased wind speed and turbulence at street level.

In order to provide a comfortable wind environment for people downtown, Section 148 of the City Planning Code establishes an equivalent (includes the effects of turbulence) windspeed (as defined in the Code) of 7 and 11 mph as comfort criteria and 26 mph as a wind hazard criterion. Section 148 sets comfort levels of 7 mph equivalent wind speed for public seating areas and 11 mph equivalent wind speed for areas of substantial pedestrian use. New buildings and additions to buildings may not cause ground level winds that would exceed these levels more

than ten percent of the time year round between 7:00 a.m. and 6:00 p.m./3/ If existing wind conditions exceed the comfort level, Section 148 calls for new buildings and additions to be designed to reduce ambient wind speeds to meet the requirements.

Exceptions may be requested under Section 309 of the City Planning Code. However, no building or addition would be permitted that would cause wind speeds to exceed the hazard level, defined as an hourly average of 26 mph, for more than a single hour of any year.

Existing and project generated wind conditions are discussed in Chapter V, Environmental Impacts, pp. 88 to 90 and Appendix C, p. A.35-39.

NOTES - Shadow and Wind

/1/ The U.S. Weather bureau data used in this analysis were originally gathered at the weather station atop the old Federal building at 50 United Nations Plaza during the years 1945-50. Data were taken hourly, annually for 16 wind directions. The data base, comprising of 32,795 hourly observations, is of sufficient length to provide a reliable estimate of future climatic conditions in San Francisco.

/2/ E. Jan Null, Climate of San Francisco, NOAA Technical Memorandum, NWS WR-126, February 1978.

/3/ Section 148 of the City Planning Code specifies the hours of 7:00 a.m. to 6:00 p.m. The available weather data that include that interval covers the hours of 6:00 a.m. to 8:00 p.m. Thus, observation from two additional evening hours and one additional morning hour are included in these data. Because, in general, winds are stronger in the afternoon and evening than in the morning, this approximation is conservative - it is likely to overestimate the existing and projected wind speeds.

E. TRANSPORTATION

The existing on-site 180-space lot provides valet parking for long- and short-term users. The site is served by local streets and by portions of the regional freeway system (see Figure 1, p. 18). Freeway access to the East Bay via the Bay Bridge is provided by ramps at First and Harrison Streets (about 2,000 ft. southeast of the site) and at Mission and Beale Streets (about 1,500 ft. northeast of the site). The Mission / Beale Street ramp currently is closed as a result of the Loma Prieta earthquake (see further discussion below). Freeway access to the Peninsula and the San Francisco International Airport is provided by ramps at Mission and Beale Streets and Harrison and Fourth Streets (about one-half mile southwest of the site). Traffic headed to the North Bay generally travels along Van Ness Avenue and Franklin Street or the Embarcadero to

Bay Street. Access from the freeway system to the project site is provided by off-ramps at Fremont and Howard Streets (about 500 ft. southeast of the site) and at Mission and Main Streets (about 2,000 ft. northeast of the site).

In October 1989, an earthquake of Richter magnitude 7.1, the Loma Prieta earthquake, occurred. It had notable effects on the regional highway system. One span of the upper deck of the Bay Bridge collapsed, closing the bridge for one month for repairs. The double-decked Cypress structure on I-880 near downtown Oakland collapsed and has since been demolished. Traffic bound to the Bay Bridge from I-880 south of I-580 no longer has direct access to the bridge and is now redirected through I-580.

Within San Francisco, major damage to State Route 480 (Embarcadero Freeway), the I-280 extension north of the U.S. 101 interchange, and the U.S. 101 ramps between Fell and Turk Streets caused closure of these routes. The section of I-280 between Army Street and the Sixth Street ramps was repaired and reopened within a few months of the earthquake; however, the other facilities remain closed. Repair of the remaining damaged section of I-280 is expected to begin in May 1991 and be completed in early 1992. Caltrans plans to retrofit the existing structure./1/

In April 1990, Mayor Agnos proposed that the City demolish the elevated freeway and replace it with a depressed roadway within the same right-of-way. The feasibility of implementing this project and sources of funding for it are being studied by City staff at the Mayor's direction and would be subject to separate environmental review. Alternatively, Caltrans has proposed repair of the Embarcadero Freeway; however, the latest cost analysis concludes that the repair work would cost almost as much as construction of a new roadway as proposed by the Mayor./2/ A decision on whether to retrofit or replace the double-decked section of The Embarcadero Freeway between Beale and the end of the Bay Bridge is still pending.

Caltrans District 4 is proceeding with plans to remove the upper deck of the U.S. 101 elevated structure between Fell Street and Turk Street (the Golden Gate / Franklin Street and the Turk / Gough Street ramps). Demolition and reconstruction work is expected to be completed by July 1991./1/ The broad lower deck of the freeway which previously carried only two lanes of traffic would, upon completion of the project, carry two-way traffic in a total of four lanes. This would be accomplished with some ramp reconfiguration, but without widening the existing structure. Capacity of the facility would be comparable to its capacity before the earthquake.

In the vicinity of the project site, Howard, Beale, Main, Mission and Folsom Streets are designated as Transit Preferential Streets in the Transportation Element of the San Francisco Master Plan, on which priority is given to transit vehicles over autos during commute and business hours on weekdays./3/ Howard, Folsom, Fremont and First Streets are designated as Primary Vehicular Streets, which the Master Plan defines as "major routes for automobile and truck movements into and out of the Downtown area." Second and Mission Streets are designated "Pedestrian Oriented Streets" in the Master Plan; the Master Plan states that on these streets certain design measures should be taken to improve mobility and render existing pedestrian space more pleasant and efficient. Beale Street is one-way southbound and carries four lanes of traffic. Howard Street is two-way adjacent to the site, with three westbound lanes and one eastbound lane. East of Beale Street, it has two lanes in each direction; west of Fremont Street, it is one-way westbound and carries four lanes of traffic. There is metered 30-minute on-street parking on both Beale and Howard Streets adjacent to the site.

The site is served by San Francisco Municipal Railway (MUNI) electric trolley and motor coach lines, providing radial service to and from the downtown area. MUNI bus lines operate on Mission and First Streets near the project site. The closest MUNI bus stops to the project site are on Beale Street at Howard Street, serving the 80X-Gateway Express and the 81X-CalTrain Express, and on Fremont Street at Howard Street serving the 12-Folsom and 42-Downtown Loop. MUNI Metro light-rail vehicle lines are accessible via the Embarcadero Station located two blocks north of the project site on Market Street. Transit routes in the project vicinity are shown in Figure 25, p. 104.

Regional transit service to the site is provided to and from the East Bay by the Bay Area Rapid Transit District (BART), at the Embarcadero Station on Market Street (about two blocks north of the site), and by AC Transit motor coaches at the Transbay Terminal on Mission Street at First Street, about one and one-half blocks northwest of the project site.

Service to the Peninsula is provided by CalTrain from the train terminal at Fourth and Townsend Streets; by the San Mateo County Transit District (Samtrans), with bus routes and stops along Mission Street (the closest to the site is in front of the Transbay Terminal); and by BART, which provides transfers to Samtrans routes at the Daly City BART Station.

The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides a.m. and p.m. peak-period bus service from/to Marin and Sonoma Counties. The closest boarding stops are along Howard Street, at the Transbay Terminal, and along Sansome Street.

Discharge stops are located along Folsom Street, at the Transbay Terminal, and along Battery Street. Golden Gate Transit provides ferry service to terminals in Larkspur and Sausalito from the Ferry building, about 2,500 ft. northeast of the site. It operates shuttle service from the Ferry building to the financial district and the South of Market area. Golden Gate Transit also operates a vanpool and club (subscription) bus program to areas not served by fixed routes.

The RIDES carpool program, operating as a nonprofit publicly funded corporation, provides consulting and matching services to help establish Bay Area carpools and vanpools.

Mission, Howard and Folsom Streets are designated as Preferred Commute Bike Routes in the Transportation Element of the City's Master Plan. Of these streets, only Howard and Folsom Streets are currently striped with bike lanes.

The effective widths of the sidewalk on Howard Street and the sidewalk on Beale Street, adjacent to the site, are about 8.5 ft. and 6.3 ft., respectively. The Howard and Beale Street sidewalks in front of the project site currently operate in unimpeded conditions during both the noon and p.m. peak hours.

The crosswalk across Howard Street, at Beale Street closest to the site, currently operates in open conditions during the noon hour and unimpeded conditions during the p.m. peak hour. The crosswalk crossing Beale Street, at Howard Street, operates in open conditions during the noon hour and unimpeded conditions during the p.m. peak hour./4/ See Appendix D, Table D-4, p. A.47, for an explanation of pedestrian flow rates and levels of service. Figure D-2, pp. A.48-89, shows photographs of sidewalk conditions for each flow regime.

A survey of the existing off-street public parking in the site vicinity indicates that a total of about 3,065 parking stalls exist within a ¼-mile radius of the project site which are 82% occupied on a typical weekday. The daily parking rate for these lots varies from $4.00 to $9.50./5/

The site is located outside the Downtown Core automobile control area designated in the Downtown Plan, a part of the San Francisco Master Plan./6/ A Plan goal is to reduce the number of private commuter vehicles and excess automobile traffic in the downtown core; the Plan discourages the addition of new long-term parking spaces in and around downtown. The site is located in an area designated as a Parking Belt in the Downtown Transportation Plan of the Transportation Element of the San Francisco Master Plan. Parking belts are areas that the Plan identifies as appropriate for short-term parking facilities to replace spaces removed from the core area.

NOTES - Transportation

/1/ Greg Boyle, Public Information Officer, California Department of Transportation, telephone conversation, December 5, 1990.

/2/ Dick Weaver, Caltrans Deputy Director of Transportation Engineering, letter to Lyle P. Renz, Acting Division Administrator, Federal Highway Administration, dated January 9, 1991.

/3/ San Francisco Department of City Planning, January 1983, *Transportation, An Element of the Master Plan.*

/4/ Based on counts and observations at the project site conducted by Environmental Science Associates on Wednesday, May 30, 1990 from 12 noon to 1 p.m. and Thursday, May 31, 1990 from 4:30 p.m. to 5:30 p.m.

/5/ Based on parking inventory and usage survey conducted by Environmental Science Associates on Tuesday, July 3, 1990 from 10:00 a.m. to 1:30 p.m.

/6/ San Francisco Department of City Planning, January 1983, *Downtown Plan, An Area Plan of the Master Plan.*

F. AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network which measures the ambient concentrations of six air pollutants: ozone (O_3), carbon monoxide (CO), particulates (both fine particulate matter [PM_{10}] and total suspended particulates [TSP]), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco, currently is designated a non-attainment area with respect to the federal ozone and CO standards. In addition, San Francisco occasionally experiences violations of state eight-hour CO and PM_{10} standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site (about 1.6 miles south at 10 Arkansas Street and previously at 900 23rd Street) is shown in Appendix E, p. A.52, together with the corresponding federal and/or state ambient air quality standards. In 1988, there was one violation of the federal and state eight-hour CO standard and five violations of the state average 24-hour PM_{10} standard in San Francisco. In 1987, there was one violation of the federal and state eight-hour average CO standard and four violations of the state PM_{10} standards. In 1986, there were two violations of the federal and state eight-hour average CO standard and five violations of the previous state average 24-hour TSP standard./1/

BAAQMD has conducted several CO "hotspot" monitoring programs in the Bay Area, including two in San Francisco. One CO monitoring program was conducted during the winter of 1979-80 at the intersection of Washington and Battery Streets about 0.5 miles northwest of the site./2/

The high eight-hour average concentration was 10.1 ppm, which violated the 9-ppm state and federal standards by 1.1 ppm. The high one-hour average concentration of 15 ppm did not violate the 20-ppm state standard or the 35-ppm federal standard. Another CO monitoring program was conducted during the winter of 1980-81 at the intersection of Geary and Taylor Streets, about one mile west of the site, and 100 Harrison Street at Spear, about 0.3 miles southeast of the site./3/ At Geary and Taylor the observed high eight-hour average concentration was 11.5 ppm, which violated the standards by 2.5 ppm, and the high one-hour concentration was 15 ppm, which did not violate the standards. At Harrison Street the observed high eight-hour and one-hour average concentrations were 7.8 ppm and 13 ppm, respectively, which did not violate the standards. In December 1985, the City monitored CO and counted traffic at the Sixth and Brannan intersection. Data from the various "hot spot" monitoring programs indicate that locations in San Francisco near streets with high traffic volumes and congested flows may experience violations of the eight-hour CO standard under adverse meteorological conditions.

Comparison of these data with those from other BAAQMD monitoring stations indicates that San Francisco's air quality is among the least degraded of all the developed portions of the Bay Area. Three of the four prevailing winds, west, northwest, and west-northwest, blowing off the Pacific Ocean, reduce the potential for San Francisco to receive pollutants from elsewhere in the region.

Data from monitoring within San Francisco show there have been occasional local exceedences of state and federal CO and state (but not federal) fine particulate standards, due largely to pollutant emissions from within the City. CO is a non-reactive pollutant and its major source is motor vehicles. CO concentrations are generally highest during periods of peak traffic congestion. Particulate levels are relatively low near the coast, increase with distance inland, and peak in dry, sheltered valleys. The primary sources of particulates in San Francisco are demolition and construction activities, and motor vehicle travel over paved roads.

San Francisco, like all other sub-regions in the Bay Area, contributes to regional air quality problems, primarily ozone, a regional problem, in other parts of the Bay Area. Ozone is not emitted directly from sources, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving hydrocarbon (HC) and nitrogen oxide (NOx) emissions, which are carried downwind as the photochemical reaction occurs. Ozone standards are violated most often in the Santa Clara, Livermore, and Diablo Valleys, because local topography and meteorological conditions favor the buildup of ozone and its precursors there.

In 1983, emissions from motor vehicles were the source of 87% of the CO, 39% of the HC, 62% of the TSP, 9% of the SOx and 54% of the NOx emitted in San Francisco./4/ These percentages are expected to apply reasonably well to current conditions.

In response to the Bay Area's ozone and CO non-attainment designations, the Association of Bay Area Governments (ABAG), BAAQMD, and the Metropolitan Transportation Commission (MTC) prepared and adopted the *1982 Bay Area Air Quality Plan (1982 Plan).*/5/ The *1982 Plan* established schedules and strategies to comply with federal ozone and carbon monoxide standards established under the Clean Air Act by December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and carbon monoxide (standards are occasionally violated). The Clean Air Act Amendments of 1990 require that within two or three years of enactment (November 15, 1990) the State submit to the Environmental Protection Agency (EPA) a revised State Implementation Plan.

Effective January 1, 1989, the California Clean Air Act provides for the designation of districts by pollutant into three classes: moderate (defined as a district that the California Air Resources Board (ARB) determines can attain the state air quality standards by December 31, 1994), serious (a district that the ARB determines cannot attain the state air quality standards until after December 31, 1994 but by no later than December 31, 1997), and severe (a district that the ARB determines cannot attain the state air quality standards until after December 31, 1997 or is unable to specify an attainment date). In each case, the Act specifies strategies that must be adopted. In all cases, plans are required to demonstrate a five percent reduction per year in district-wide emissions for each non-attainment pollutant or its precursors unless the ARB determines that the alternative emission reduction strategy is equal to or more effective than district-wide emission reductions in improving air quality or that despite inclusion of every feasible measure and an expeditious adoption schedule, the district is unable to achieve a five percent reduction per year. The ARB and the BAAQMD are in the process of determining into which classification the BAAQMD falls. The BAAQMD expects to have a draft determination of the district's classification in February 1991 and a final determination by June 1991./6/

NOTES - Air Quality

/1/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter (PM_{10}) which has been demonstrated to have health implications when inhaled. The previous state and federal particulate standards were 100 micrograms per cubic meter (ug/m^3) and 260 ug/m^3 of particulates, respectively. The present state and federal PM_{10} standards are 50 ug/m^3 and 150 ug/m^3, respectively, of fine particulate matter. Although both the previous and present particulate standards are

measured in ug/m^3, under the PM_{10} standards only those particulates 10 microns or less in size are measured. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50% to 60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM_{10} standards. BAAQMD is presently monitoring PM_{10} at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco.

/2/ Association of Bay Area Governments, AQMP Tech Memo 33, "Summary of 1979/80 Hotspot Monitoring Program," Berkeley, California, June 1980.

/3/ Association of Bay Area Governments, AQMP Tech Memo 40, "Results of the 1980/81 Hotspot Monitoring Program for Carbon Monoxide," Berkeley, California, January 1982.

/4/ Bay Area Air Quality Management District (BAAQMD), "Base Year 1983 Emissions Inventory, Summary Report," San Francisco, California, August 1987.

/5/ Association of Bay Area Governments (ABAG), BAAQMD, and MTC, *1982 Bay Area Air Quality Plan*, Berkeley, California, December 1982.

/6/ Patrick Navis, California Air Resources Board Liaison to the Bay Area Air Quality Management District, California Air Resources Board, telephone conversation, January 8, 1991.

G. HAZARDOUS MATERIALS

BACKGROUND

Although the project site is currently paved and used as a vehicle parking lot, the property and surrounding neighborhood have a history of industrial, manufacturing, and commercial land uses. In 1985, during excavation for an office tower, contamination attributed to past industrial activities was uncovered directly across the street at 301 Howard; that site was remediated with local, state, and federal agency cooperation. Recent sampling and testing programs have verified that storage, use and disposal of hazardous materials from past activities have affected certain portions of the soils and groundwater at the project site, while other portions of the soils appear to have been unaffected./1/ Development of contaminated portions of the site could result in the excavation of hazardous materials.

Certain chemical and physical properties of a substance may cause it to be considered hazardous. Under state law, hazardous characteristics are grouped into four general categories: toxic, ignitable, corrosive, and reactive./2/ As defined in the California Code of Regulations (CCR), Title 22, Section 66084, a "hazardous material" is a "substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in

serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed."

According to the California Health and Safety Code, Section 25124, and for purposes of this EIR, a "hazardous waste" is any hazardous material that is abandoned, discarded or in storage prior to recycling. The categories that apply to hazardous materials also apply to hazardous wastes: toxicity, ignitability, corrosivity, or reactivity. For example, excavated soil containing hazardous materials would be a hazardous waste if the concentration of contaminants exceeded specific CCR Title 22 criteria.

Environmental contaminants are not necessarily hazardous materials or hazardous wastes. For purposes of this EIR, soil or water is considered to be contaminated if it contains elevated (above natural background) levels of a chemical substance, and if the resulting soil or water has the potential to cause human health effects or adversely affect the natural environment pursuant to established regulatory criteria.

Remediation (clean-up) of hazardous wastes found at a project site is required if excavation of these materials is performed at the site; it may also be required if certain other activities are proposed. Even if soil or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Clean-up requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

HAZARDOUS WASTE REGULATORY FRAMEWORK

The generation, storage and handling of hazardous materials and wastes are regulated by various federal, state and local laws and regulations aimed at the protection of public health and the environment. A brief summary of regulations follows; a more detailed discussion of federal and state regulations is presented in Appendix F, pp. A.54-59.

Federal and State

At the federal level, the primary laws governing hazardous wastes are the Resource Conservation and Recovery Act of 1976 (RCRA), and the Comprehensive Environmental Response,

Compensation and Liability Act of 1980 (CERCLA). Generally, these laws require that responsible parties report any known hazardous waste contamination of soil or groundwater to the EPA.

At the state level, the California Hazardous Waste Control Law (HWCL) is the state equivalent of RCRA. California regulations incorporate federal standards, but in many respects are stricter. The Toxic Substance Control Division of the California Department of Health Services (DHS) is the agency empowered to enforce federal hazardous materials and waste regulations in California, in conjunction with the EPA. When hazardous waste is transported for treatment or disposal, hazardous waste manifests must be prepared by the generator. A hazardous waste manifest lists a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with DHS.

The Project Area is located within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB), which has the authority to require groundwater investigations and to remediate the site when the quality of the waters of the state are threatened. Clean-up standards employed by the RWQCB can be more stringent than those used by EPA or DHS./3/ If soils containing hazardous materials, are excavated, the Bay Area Air Quality Management District (BAAQMD) may impose specific requirements on such activities to protect ambient air quality from dust or airborne contaminants.

Local

The San Francisco Department of Public Health, the San Francisco Department of Public Works, and the San Francisco Fire Department are involved directly in the management of hazardous materials and wastes within the City and County of San Francisco.

The Department of Public Health is designated by the State Water Resources Control Board to enforce the state Underground Storage Tank (UST) program. Permitting of underground storage tank installation and removal is overseen by the Department of Public Health. The Department of Public Health also issues permits to businesses that store hazardous materials and conducts inspections on a regular basis to ensure compliance with regulatory requirements. The Department of Public Health, the State Department of Health Services and RWQCB jointly oversee subsurface investigations and remediation at sites containing hazardous wastes.

The Department of Public Works administers Article 20, Ordinance No. 253-86, of the Public Works Code. This ordinance, entitled "Analyzing the Soil for Hazardous Wastes," requires soils

testing for projects in San Francisco that involve excavation in areas underlain by artificial fill. The ordinance applies to properties in San Francisco located on the San Francisco Bay side of the original high tide line (or any other sites designated by the Director of Public Works, who has the authority to specify additional sites for study on an individual basis). The project site lies within the designated high-tide zone, and does fall under the authority of this ordinance./4/

The San Francisco Fire Department issues permits for the storage of flammable liquids. Permitting and other records associated with the storage of flammable liquids on file at the Fire Department date back to the early 1900s, prior to state and federal involvement in hazardous material and waste management.

Site remediation or development may be subject to regulation by other agencies. For example, if extraction of contaminated groundwater or construction dewatering of a hazardous waste site were required, subsequent discharge of such waters to the stormwater / sewer collection system could require a permit from the Department of Public Works Industrial Waste Division.

HAZARDOUS MATERIAL WORKER SAFETY REQUIREMENTS

Properties found to be contaminated are subject to special worker safety requirements both to protect construction workers during demolition and excavation and to protect site investigation and cleanup workers who are performing site studies or site remediation activities. In both instances, site safety plans would be required in compliance with federal and state Occupational Safety and Health Administration (OSHA) requirements. Such site safety plans typically include provisions for safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency response and fire prevention plan preparation. Additional information on hazards-related safety requirement is presented in Appendix F, pp. A.54-59.

INFORMATION SOURCES

Information evaluated in this report was gathered from available records. Past and current owners and occupants of the Project site were not consulted. To comply with San Francisco's Article 20, Ordinance No. 253-86, of the Public Works Code, "Analyzing the Soil for Hazardous Wastes," the consulting firm of Dames & Moore investigated past historical uses of the project site and designed and implemented a soil sampling program to address contaminants of concern. Findings regarding hazardous contamination at the property were presented in *Site History and*

Subsurface Investigation, 300 Howard Street, San Francisco, California, prepared for Bechtel Investments, Inc., October 26, 1990./1/ That report was the primary source of information on hazardous materials actually encountered at the site. The report has been filed with the Department of Public Health for review.

In evaluating the potential for contamination of the project site and adjacent areas, the *Site History and Subsurface Investigation* also utilized information from historical archives, such as fire insurance maps prepared by the Sanborn Insurance Company, and database records of federal, state, and local regulatory agencies. Files, maps, data bases, and other information sources reviewed for the preparation of the *Site History and Subsurface Investigation* are documented in that report./1/

While the information presented here is believed to be accurate, no certifications or guarantees can be made to that effect. Because of the imprecise nature of the original information sources, no representation is made that the sites discussed below are the only potentially contaminated areas, nor that the possible contaminants discussed represent the sole hazardous waste-related problems at a particular site. Furthermore, because public agency records are sometimes incomplete, it is possible that remediation of environmental contamination has already occurred at one or more of the sites discussed below.

HISTORIC SITE USES AND POTENTIAL SOURCES OF CONTAMINATION

Historic land uses at the site and vicinity were evaluated in the Dames & Moore *Site History and Subsurface Investigation* for their potential to contaminate the site with hazardous wastes./1/ Industrial activities in the neighborhood began in 1854 when the San Francisco Gas Works began operation across the street from the project site on the former shoreline of the Bay at what is now Fremont and Howard Streets. At that time the project site was roughly two to four feet underwater, and the gas works regularly disposed of its tarry petroleum wastes in the tidal waters at or near the project site. The wastes accumulated to form an exposed, tarry surface at low tide. The area became known as "Tar Flat."/1/ Historic records and modern soil test data implicate the San Francisco Gas Works as one of the primary sources of industrial waste disposal in the area.

By about 1865 the project site had been covered and filled by about ten to fourteen feet of fill, comprised primarily of sands, gravel, building rubble, and debris. The filled site was quickly put to use as a coal storage yard for the nearby Gas Works. The property later held an iron works, a coke and brick yard, and a steel company. Industrial use continued into the early 1900's. In

1906, structures on the project site and throughout the entire area were destroyed by the earthquake and fire. Records show that the project site was the starting point of one of the major fires that consumed the South of Market industrial neighborhood./1/

When the project site was rebuilt, industrial uses resumed, then gradually evolved toward commercial uses. In 1913 a copper and brass works occupied a portion of the site. After about 1920, the property was used for automobile sales and service, gas and oil storage, warehouses and a private garage, and offices. By 1948 about half the property was a vacant lot. Sometime after 1965 the last structures (small office buildings and the private garage) were demolished and the site was used exclusively for parking. Excluding parked vehicles, no obvious sources of contamination are visible at the project site. All remnants of previous buildings have been removed, and the existing asphalt pavement gives the property a relatively clean appearance.

During the years of industrial use, contamination of site soil or groundwater could have occurred by material spills, leaks, carelessness, accidents, or poor waste handling processes. Potential concerns at the project site include contamination from coal and coke yards, various metal works wastes, and gas and oil storage. Table 2 lists historic site uses that could have contributed to soil or groundwater contamination.

Another common source of contamination is leaking underground storage tanks. Much soil and groundwater contamination in industrial areas can be attributed to leaking USTs, which comprise one of the most common causes of environmental contamination in California. If a tank leaks, the escaping contents will contaminate soil adjacent to the leak. If not detected, contaminants from a leaking UST could reach the groundwater. Contamination of groundwater with fuel is considered a serious environmental problem, causing contamination of soil and groundwater that can extend beyond the leak site. On the basis of case lists provided by the Regional Water Quality Control Board -- San Francisco Bay Region, there are no documented USTs or investigations regarding fuel leaks at the project site./1/

In addition, much of the historic waterfront area was filled to grade with material that included debris and rubble. Such heterogeneous fill has been implicated as a source of persistent soil contamination at several development sites in this area of San Francisco, most notably with heavy metals such as lead. The likelihood of contaminated fill occurring in this part of the City was the reason for enactment of San Francisco's "Testing the Soil for Hazardous Wastes" ordinance in 1986.

TABLE 2: HISTORIC LAND USES AND POTENTIAL CONTAMINANTS AT THE PROJECT SITE

Key/a/	Land Use	Approximate Years of Use	Potential Contaminants
1	S.F. Gas Works wastes	1854~1865	Aliphatic and aromatic hydrocarbons, including tars, greases, oils, and polynuclear compounds
2	Coal storage	~1865~1887	Coal dust residues
3	Brick and coke yard	~1899~1929	Metals, polynuclear aromatic hydrocarbons
4	Park Steel Company	~1899+	Metals, acids, cyanide, oils, solvents
5	Copper & brass works	~1913+	Metals, acids, caustics, solvents
6	Auto sales and service	~1929+	Metals, gasoline, oils, solvents
7	Gas & oil storage	1948~1965	Gasoline, oils, solvents

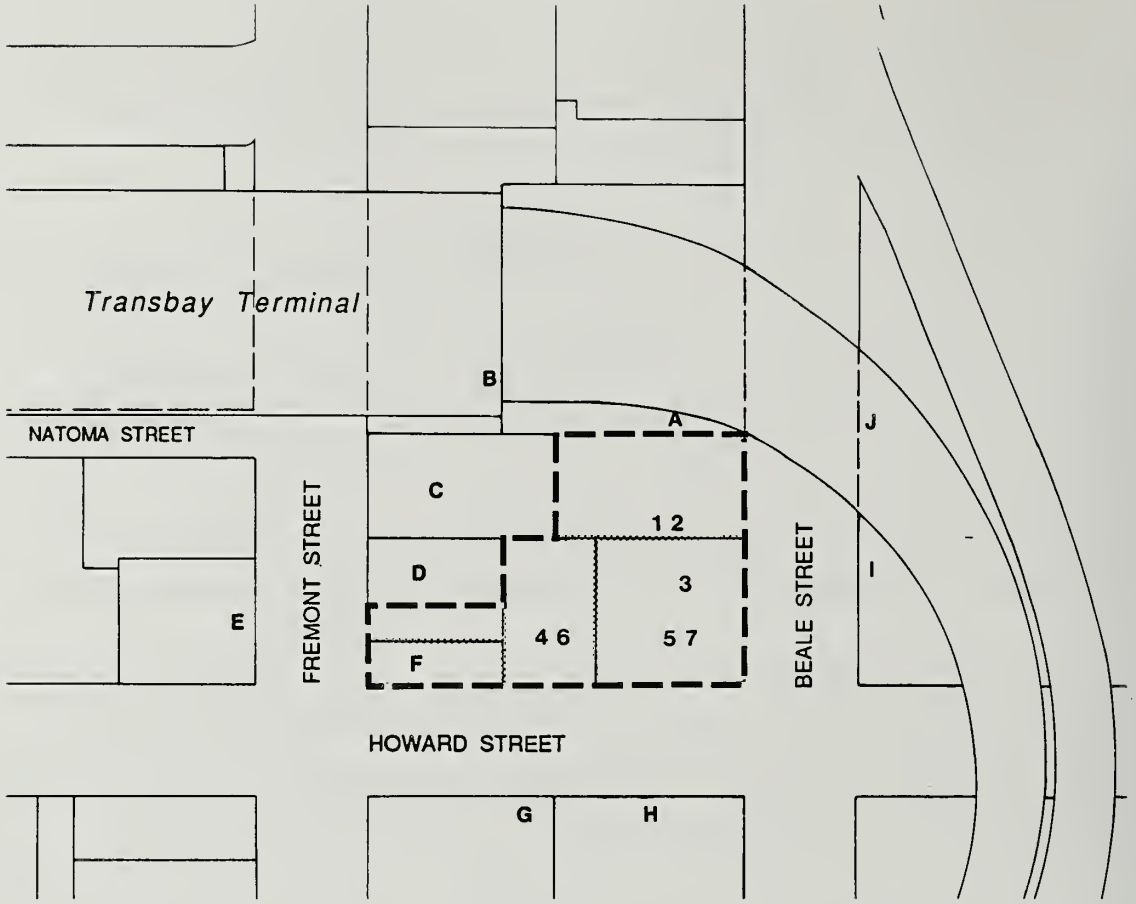
/a/ Approximate locations of potential sources of contamination are shown in Figure 13 on p. 58.

SOURCE: Dames & Moore, *Site History and Subsurface Investigation*, 1990; Environmental Science Associates, Inc.

Figure 13 shows approximate locations of potential sources of contamination at the project site and in the project vicinity. Locations are keyed to references in Table 2, above, and in Appendix F, pp. A.54-59, where potential sources of contamination from off-site sources are discussed.

TEST RESULTS

In accordance with requirements of San Francisco's Ordinance 253-86, "Analyzing the Soil for Hazardous Wastes," soil samples were collected at seven borehole locations within the project



VICINITY:

A Empire Foundry & Machine Works;
Risdon Iron Works
B Vulcan Iron Works;
Lloyd & Scovell Iron Co.
C Meese & Gottfried Machine Shop;
Silk Screen & Printing Shop
D C.H. Evans Machine Shop
Sheet Metal Works
E San Francisco Gas Works
F Marine Electric & Book Binding
G John Finn Metal Works
H Brode & Clark Iron Works;
Whittier Coburn Co., Paints, Oils, Glass;
Parking lot with UST
I Moore & Scott Iron Works
Machine shops
J California Iron Works
Manufacturing shops

AREA TO BE EXCAVATED:

1 SF Gas Works wastes
(entire project area)
2 Coal storage
(much of project area)
3 Brick and coke yard
4 Park Steel Company
5 Copper & brass works
6 Auto sales and service
7 Gas & oil storage

Project Area

0 200
Feet

SOURCE: Environmental Science Associates, Inc.
Dames and Moore.

300 Howard Street ■

Figure 13
Potential Sources of Contamination

area and two locations just outside the area to be excavated./1/ Samples of shallow groundwater were also collected. In addition to testing parameters specified by the ordinance, the samples were analyzed for semivolatile organic compounds./4/ Several chemical contaminants were detected in certain soil samples at concentrations exceeding regulatory criteria. A brief summary of major test results and conclusions is presented below./1/

The principal hazardous contaminants found at the project site included benzidine, polynuclear aromatic hydrocarbons, and the volatile aromatic hydrocarbons: benzene, ethylbenzene, toluene, and xylene which are most frequently associated with spillage of petroleum fuel products. The former on-site coke piles and the wastes derived from historical gas manufacturing operations were implicated as likely sources of the contaminants./1/ In addition, the presence of volatile organic compounds suggest that an underground storage tank (UST) might be present on the site.

Benzidine is a poisonous and carcinogenic industrial pollutant that is not known to occur naturally./5/ In Title 22 of the California Code of Regulations (22 CCR), hazardous waste criteria have been designated for a number of soil contaminants, among them benzidine./6/ Section 66696 (5)(D) of 22 CCR specifies that a soil is "toxic and hazardous" if it contains benzidine at a concentration greater than 0.001 percent by weight (equivalent to 10 milligrams per kilogram, [mg/kg]). Should benzidine concentration exceeded 0.1 percent (1000 mg/kg), the soil would be considered "extremely hazardous." Benzidine was detected in concentrations exceeding the hazardous threshold at five of the seven sampling locations within the area to be excavated. At the location where the highest concentration was found, benzidine was measured at over 16,000 mg/kg at the thirteen to eighteen-foot depth, a level considered extremely hazardous. Benzidine was also detected in the groundwater.

Polynuclear aromatic hydrocarbons (PNAs) are a group of closely related organic compounds having chemical structures made up of two or more associated aromatic rings. All PNA compounds are toxic at certain concentrations, and several are carcinogenic. Traces of PNA soil contaminants are found commonly in the environment in both urban and rural areas. Approximately eighteen individual PNA compounds were detected in soils and groundwater at the project site. No hazardous threshold concentration has been defined for PNAs as a class, but in California the DHS as a matter of practice uses guidelines of 100 mg/kg total PNAs and 10 mg/kg carcinogenic PNAs for hazardous waste determination./7/ Based on these guidelines, portions of the contaminated soils would be managed as hazardous wastes during the excavation process. The highest level of total PNAs measured in the fill exceeded 11,000 mg/kg, with over 900 mg/kg of carcinogenic PNAs./1,5/

Benzene, ethylbenzene, toluene, and xylenes (BETX) are widely used aromatic solvents found in gasoline and other petroleum products. Benzene is a carcinogen. Concentrations of BETX were detected in several sampling locations. Hazardous concentrations of these chemicals have not been clearly defined by state regulation, but their presence always indicates contamination. Highest concentrations of benzene, ethylbenzene, toluene, and xylenes in the area to be excavated were 19 mg/kg, 55 mg/kg, 230 mg/kg, and 620 mg/kg, respectively. These concentrations were all found at a depth of approximately fourteen feet in the location formerly designated as a gas and oil storage area during the 1950s and 1960s. The same soil sample contained 2,900 mg/kg of total petroleum hydrocarbons as gasoline, which indicates the possibility of a past fuel leak, as from a UST. BETX compounds, especially benzene and xylene, were also detected in two of the four groundwater samples at concentrations that, for one or more of the chemicals, exceeded 1,000 micrograms per liter. Groundwater contamination in the Bay Area is subject to the authority of the Regional Water Quality Control Board (RWQCB). Any measurable levels of BETX compounds in groundwater warrants regulatory consideration and requires reporting to the RWQCB. That agency will determine whether any groundwater remediation is appropriate or required.

Other chemical parameters stipulated by San Francisco's hazardous waste ordinance were analyzed./4/ Some, such as metals and cyanide, were detectable but judged to be present at concentrations either below regulatory guidelines or, where no applicable regulatory guidelines exist, low enough not to be of concern./1/

NOTES - Hazardous Materials

/1/ Dames & Moore, *Site History and Subsurface Investigation, 300 Howard Street, San Francisco, California*, prepared for Bechtel Investments, Inc., October 26, 1990.

/2/ *Toxic Substances* may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability, or even death, depending on such factors as concentration, route of exposure and duration of exposure. For example, such substances can cause disorientation, acute allergic reactions, asphyxiation, skin irritation or other health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include benzene, which is a component of gasoline and a suspected carcinogen, and methylene chloride, a common laboratory solvent.

Ignitable Substances are hazardous because of their ability to burn. Gasoline, hexane and natural gas are examples of ignitable substances.

Corrosive Materials can cause severe burns or damage materials; these include strong acids and bases, such as lye or sulfuric (battery) acid.

Reactive Materials may cause explosions or generate toxic gases. Explosives, pure sodium or potassium metal (which react violently with water), and cyanide are examples of reactive materials.

/3/ The Regional Water Quality Control Board (RWQCB) water quality protection objectives and goals for the San Francisco Bay Region are contained in the *Water Quality Control Plan, San Francisco Bay Basin, Region (2)*, December 1986.

/4/ Provisions of the San Francisco's "Analyzing the Soil for Hazardous Wastes" ordinance call for a site history and soils investigation to be conducted prior to issuance of building permits for development involving excavation of more than 50 cubic yards of soil. If any subsurface material exceeding hazardous waste standards is discovered during soil sampling activities, additional investigations and/or site remediation, overseen by appropriate state and local agencies, can be required before issuance of a building permit.

Under specific provisions of the ordinance, soils must be analyzed for the following chemical parameters: persistent and bioaccumulative toxic inorganics (e.g. metals), volatile organics, PCBs, cyanides, pH, flammability, sulfides, methane and other flammable gases, and any other parameters designated by the Director of the Department of Public Health. The report cited under Note /1/ was prepared in order to comply with provisions of the Soils Analysis Ordinance.

/5/ Chemically, benzidine is a nitrogen-containing biphenyl derivative rather than a polynuclear aromatic hydrocarbon. The Dames & Moore report does not draw that distinction. The chemical structure of benzidine can be contrasted with structures of typical PNAs by refering to *The Merck Index*, 11th Edition, Merck & Co. Inc., Rahway, N.J., 1989.

Sources of benzidine are discussed in Howard, Philip H., *Handbook of Environmental Fate and Exposure Data for Organic Compounds, Volume I: Large Production and Priority Pollutants*, Lewis Publishers, Chelsea, Michigan, 1989.

/6/ California Code of Regulations, Title 22, Article 11, Section 66696, "Toxicity Criteria."

/7/ Bufton, Beth, Toxic Substances Control Division, California Department of Health Services, telephone conversation, January 12, 1990.

V. ENVIRONMENTAL IMPACTS

An application for environmental evaluation for a development proposal on the site was filed on October 30, 1989. On July 12, 1990, on the basis of an Initial Study, the Department of City Planning, Office of Environmental Review, determined that an Environmental Impact Report (EIR) was required. Issues determined as a result of the Initial Study to require no further environmental analysis included: Glare, Housing, Operational Noise, Construction Air Quality, Utilities / Public Services, Biology, Hydrology, Water Quality, Energy / Natural Resources, and Cultural Resources. Therefore, this document does not discuss these topics (see Appendix A, pp. A.1-30, for the Initial Study). A discussion of Land Use and Zoning is included to provide an informational context for better understanding of impacts of the project.

A. LAND USE AND ZONING

CUMULATIVE CONTENT

The impacts generated by the project would contribute to cumulative impacts that have been analyzed for the year 2000 in three Program EIRs published by the Department of City Planning. They are the Mission Bay EIR (Final EIR certified August 23, 1990, Case No. 86.505E), the South of Market EIR (Final EIR certified December 7, 1989, Case No. 85.463EZM), and the Downtown Plan EIR (Final EIR certified October 18, 1984, Case No. EE81.3)./1/ The Mission Bay and South of Market Final EIRs present the most current, consistently derived forecasts of employment, divided into different business activities and building space for the C-3 (Downtown) Districts, within which the project is located./2/ In addition, both provide forecasts for the South of Market Plan area. The Mission Bay Final EIR also presents distinct forecasts for areas other than the C-3 Districts and South of Market area, which together define the "Downtown & Vicinity": the Northeast Waterfront, Civic Center / South Van Ness, and Mission Bay areas.

The Mission Bay and South of Market Final EIRs also incorporate assumptions of growth and / or change in employment and building space for the rest of San Francisco and the Bay Area region. Those citywide and regional forecasts are more general than those produced for the areas within the Downtown & Vicinity, but are sufficiently detailed for purposes of providing the proper context for analyzing cumulative environmental impacts.

The Downtown Plan EIR contains other cumulative impact information regarding such topics as energy consumption, community services and seismic effects that remains current and valid, and is applicable to the 300 Howard Street project.

Where information from these three program EIRs is presented in the 300 Howard Street EIR, it will be incorporated by reference with a summary, pursuant to CEQA Sections 21061 and 21100 (see also State CEQA Guidelines Section 15150). Those reference documents are available for public review at the San Francisco Department of City Planning, 450 McAllister Street, San Francisco.

These forecasts account for a decline rather than previously anticipated growth in employment in the C-3 District and elsewhere in the Downtown & Vicinity during the early 1980's; provide forecasts of space associated with employment growth in the future; and take into account specific buildings that have been proposed or approved, or are under construction that would accommodate a portion of the employment increase forecast. The forecasts go beyond the timeframe during which that known quantity of building space would be built and absorbed./3/

In summary, the forecasts show about 94,459,000 to 94,884,000 sq. ft. of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,500,000-25,900,000 sq. ft. over the amount existing in 1985 (the setting year established for the analysis). The forecasts account for demolition and new construction, and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million sq. ft. of office space vacant in 1985 and another several million approved or under construction as of 1985. A five percent vacancy rate is assumed in year 2000. A relatively small amount of the total space would be proposed and approved between 1986 and 1997 (to be built and absorbed by 2000). (See Mission Bay EIR, Vol. III, pp. XIV.B.37-41.) About 75% of the office space would be in the C-3 District. In 2000, the proposed project would contribute about one-half of one percent of the total future amount of office space in the Downtown & Vicinity.

LAND USE

The project would require the removal of a 29,170 sq. ft paved surface parking lot and for the construction of a 27-story office building with retail and open space. An existing three-story building containing 3,300 sq. ft. of restaurant use and 6,600 sq. ft. of vacant space would be upgraded as part of the project, and open space would be developed on a currently vacant lot of

about 2,500 sq. ft., if acquired. The proposed project would increase the density of development on the site, adding about 394,780 sq. ft. of office space applicable to the FAR, 12,000 sq. ft. of net new retail (including restaurant) space (total project retail component [15,300 sq. ft.] - existing restaurant use in the Marine Electric building [3,300 sq. ft.]) and 8,600 sq. ft. of open space. Office use and open space would be new uses to the site. The existing 29,170 sq. ft. surface parking lot on the project site provides approximately 180 tandem valet spaces; the proposed project would replace these parking spaces with about 130 tandem valet spaces located in two subsurface parking levels, or about 41,670 sq. ft. of parking.

In conjunction with other approved and proposed projects, the project would continue the trend of high-rise office development in the South of Market area. Traditionally, the South of Market area has been characterized by businesses such as retail, printing and other services. Some older buildings in the area, which typically house these uses, have been replaced by high-rise office buildings.

Parts of the South of Market area, particularly northeast of the project block, have been developed with high-rises such as Fremont Center, Pacific Gateway, 100 Spear Street, and 160 Spear Street. To the northwest of the project stand the 71 Stevenson, 49 Stevenson, 90 New Montgomery Street, and 455 Market Street highrise buildings. The project would be similar to the 301 Howard Street development located on the block to the south of the project site, and to the 100 First Street project recently completed two blocks northwest of the site. It would be similar to recently approved high-rises in the vicinity such as 222 Second Street, 524 Howard Street, 101 Second Street and 299 Second Street. The project would differ from development to the west and east of the project site. The project would represent the continuing expansion of the downtown financial district into the area surrounding the Transbay Transit Terminal, into an area identified for such development in the Downtown Plan.

The project would be consistent with the description of the C-3-0 (SD) Downtown Office district described in Article 2, Section 210.3 of the City Planning Code. The Section describes the district as "playing a leading national role in finance, corporate headquarters and service industries, and serving as an employment center for the region."

As described in Chapter IV, Environmental Setting, p. 36, two alternative alignments under study for the Peninsula Commute Service (PCS) downtown extension pass through the project site./4/ Alignment Alternative 5A would turn from Main Street westbound to an underground station on the northside of Howard Street between Fremont and Second Streets. There would be clearance

of about 15 feet between the top of the tunnel leading to the station and ground level at the project site, with a mezzanine level to provide passenger access from street level to platform level. Under this conceptual design for the proposed station, only one of the project subsurface parking levels would likely be accommodated; both subsurface parking levels would not be accommodated. A variant to Alternative 5A would eliminate the mezzanine level, allowing passenger access directly from street level to the station platform. This variant would require less depth to the underground tunnel, which would occupy the subsurface directly below the project site; the project parking garage would not be accommodated under this variant to Alternative 5A.

Alignment Alternative 5B would turn from Second Street eastward to an underground station on the northside of Howard Street from about midblock between Second and First Streets to Beale Street. With Alternative 5B, with or without (as a variant) the mezzanine level, the underground station would occupy the subsurface directly below the project site; the project parking garage would not be accommodated under Alternative 5B.

The third alternative alignment under current study, Alternative 4A, would run under Second Street north to Market Street and would not affect, nor be affected by, the project. The impacts of all three of these Alternatives are due to be evaluated in an EIS currently in preparation by the Peninsula Corridor Study Joint Powers Board.

ZONING

The City Planning Code contains controls regarding scale, intensity, and location of growth in downtown San Francisco; architectural preservation; open space; sunlight access; wind criteria; and transportation. The relationship of the project to selected sections of the City Planning Code is discussed here and summarized in Table 3.

The basic Floor Area Ratio (FAR) for the C-3-0 (SD) district is 6:1. Floor Area Ratio is the ratio of gross floor area to site size. A number of building uses can be excluded from the gross floor area calculation: ground-floor building service and internal circulation; required replacement short-term parking; cultural, religious and social service areas; ground-floor retail, restaurant, and personal service space up to 75% of ground-floor open space and interior areas; parking equal to or less than seven percent of the gross floor area (Section 102.9(b)1-16). Development greater than the basic 6:1 FAR is allowable up to a maximum of 18:1 FAR, through the transfer of development rights (TDR) from sites within the same zoning district, or from sites in the C-3-0

TABLE 3: RELATIONSHIP OF THE PROJECT TO THE CITY PLANNING CODE

	City Planning Code Requirements/Limits	Project
Height (Sections 260 and 263.9)/a/	350 ft. (385 ft. with allowable exceptions)	350 ft./b/
Bulk (Section 270)		
Base Height	103 ft.	95 ft.
Lower Tower		
Length	160 ft.	155 ft.
Diagonal	190 ft.	170 ft.
Maximum Average Floor	17,000 sq. ft.	16,750 sq. ft.
Maximum Floor	20,000 sq. ft.	16,750 sq. ft.
Upper Tower		
Length	130 ft.	130 ft.
Diagonal	160 ft.	145 ft.
Maximum Average Floor	12,000 sq. ft.	11,800 sq. ft.
Maximum Floor	17,000 sq. ft.	11,800 sq. ft.
Volume Reduction (above 160 ft.)	27%	29%
FAR (Section 124)	6:1 Basic, 18:1 Maximum with TDR	11.4:1
TDR (Section 128)	Allowable up to 18:1 FAR, equivalent to a maximum of 420,000 sq. ft. of gross floor area on this site, in addition to basic FAR.	188,500 sq. ft. of TDR would be used on the development site (equivalent to about 5.4:1 FAR in addition to basic FAR)./c/
Architectural Resources (Article 11)	Designates buildings in Categories I to IV, and into six Conservation Districts, based on architectural merit, with related provisions regarding preservation.	The Marine Electric Company Building is designated a Category III building and would be incorporated into the project. The project site is not within a designated conservation district.
Open Space (Section 138)	One sq. ft. per 50 sq. ft. of office and retail space or 7,940 sq. ft. for the project.	8,600 sq. ft. of on-site exterior open space would be provided.

(Continued)

TABLE 3: RELATIONSHIP OF THE PROJECT TO THE CITY PLANNING CODE (CONTINUED)

	City Planning Code Requirements/Limits	Project
Downtown Park Fund (Section 139(d))	Contribution of $2.00 for each net sq. ft. of office applicable to gross floor area to the Downtown Park Fund.	One-time payment equal to $789,560 for the project.
Shadow (Sections 147 and 295)	Minimize substantial shadow impacts on public plazas and other publicly accessible spaces, without unduly restricting, development potential; consider duration, area, and importance of sunlight to utility of open space. No new shadow on Recreation and Park Dept. property from one hour after sunrise to one hour before sunset (per Proposition K).	Project would add some new shadow to existing open space areas in the project vicinity. The project would not cast any new shadow on property under the jurisdiction of Proposition K. The project would add new shadow to Beale Street during morning and afternoon hours. See pp. 74-88.
Wind (Section 148)	Ground-level winds may not exceed (more than 10% of the time year round between 7:00 a.m. and 6:00 p.m.), 11 mph in areas of substantial pedestrian use and seven mph in public seating areas.	Project would not exceed the wind criteria and thus would comply with these provisions. See pp. 88-90.
Art (Section 149)	Publicly accessible art equal to one percent of construction cost.	Project would comply.
Off-Street Loading (Sections 152.1 and 155(c))	0.1 space per 10,000 sq. ft. of office space. Loading spaces for retail use are not required when the area of retail use applicable to the project's gross floor area is 10,000 sq. ft. or less. Access from Transit Preferential Streets discouraged.	Project would comply with two full-size truck loading spaces and four van spaces, the equivalent of four truck spaces. Truck loading spaces would be accessed from Beale Street, a Transit Preferential Street.

(Continued)

TABLE 3: RELATIONSHIP OF THE PROJECT TO THE CITY PLANNING CODE (CONTINUED)

	City Planning Code Requirements/Limits	Project
Parking (Section 155(g))	Rate structure to encourage short-term use; long-term use discouraged.	130 tandem valet spaces. Rate structure would favor short-term users.
Transportation Broker (Section 163)	On-site transportation brokerage service required for buildings exceeding 100,000 sq. ft. to minimize transportation impacts of added office development in the downtown.	Would be provided by building management.
OAHPP (Section 313)	OAHPP requires 150 units or payment of an in-lieu fee of about $2,740,000 for proposed 394,780 net new sq. ft. of office space.	Project sponsor would comply with OAHPP.
Employment (Section 164)	Local employment program and employment brokerage services required for building exceeding 100,000 sq. ft. to encourage employment and work training for San Francisco residents.	Building management to provide brokerage services.
Child Care (Section 314)	On-site child care services or in-lieu fee required of $1.00 per sq. ft. of net additional office space.	Project would comply.

/a/ Section numbers in parentheses refer to sections of the City Planning Code.
/b/ Excluding the 16 foot rooftop mechanical penthouse, as permitted under Section 260(b)(1)(A) of the City Planning Code.
/c/ The site from which development rights would be transferred has not been identified. The FAR on the combined preservation and development sites would be 6:1, if both are in this Use District. The Downtown Plan excludes from FAR: mechanical and building service space; ground-floor internal circulation areas; ground-floor and mezzanine-level (at the discretion of the City) retail, personal service and restaurant space up to 75% of the area of the ground-floor interior; and exterior open areas.
/d/ Under Section 153(a)(6) of the City Planning Code, in the C-3 District a substitution of two service vehicle spaces for each required off-street freight loading space may be made, provided that a minimum of 50 percent of the required number of spaces are provided for freight loading.

SOURCE: Environmental Science Associates, Inc.

and C-3-R districts that include buildings rated I or II under the Downtown Plan with unused potential floor area. In any instance, the amount of floor area developed on the preservation (transferor) and receiver sites may not exceed the aggregate maximum allowed by the City Planning Code for those two sites. Furthermore, the building on the development site receiving TDR must comply with all limitations imposed by the City Planning Code, including review under Section 309: Permit Review in C-3 Districts. About 188,500 sq. ft. of TDR is proposed to be transferred to the project site from as yet unidentified sites.

The Downtown Plan includes four categories of architecturally significant buildings and sets forth policies pertaining to development for each category. Category I (significant buildings, retain essentially intact); Category II (significant buildings, additions to height at rear may be feasible); Category III (contributory buildings outside a conservation district and of individual importance); and Category IV (contributory buildings in a conservation district, encourage retention, allow replacement as a contributory building). TDR may not be transferred to sites containing significant or contributory buildings, if development would result in demolition or substantial alteration of these buildings. The Marine Electric Company Building located on the project site is listed as a Category III Building, and would be rehabilitated as part of the proposed project.

The City Planning Code contains controls governing the alteration of buildings designated in Article 11 as significant or contributory. For significant or contributory buildings, Section 1111.6 of the City Planning Code states that the distinguishing original qualities or character of the building may not be damaged or destroyed and that any distinctive architectural feature which affects the overall appearance of the building shall not be removed or altered unless it is the only feasible means to protect the public safety. Proposed alterations to the Marine Electric Company building would be reviewed pursuant to standards set forth in Section 1111.6. Review includes referral to the Landmarks Preservation Advisory Board for a recommendation to the City Planning Commission, which may approve, disapprove, or approve with conditions the alteration application.

The City Planning Code does not require off-street parking for commercial projects in the C-3-O (SD) District. Under Section 102.9(b)(6), floor area for accessory parking and loading space, as defined in Section 204.5, would not be counted in the FAR calculation of the building. Accessory parking space may include up to seven percent of the total gross floor area of the building; parking area in excess of the seven percent would require Conditional Use authorization

and would apply to the FAR. The project would provide about 27,870 sq. ft. of parking space (excluding entry and exit ramps), the full seven percent of the project's gross floor area allowable for parking as an accessory use.

The site is within the 350-S height and bulk district: the height limit is 350 ft. Structures up to 385 ft. are allowable under the provisions outlined for optional upper tower extensions. At 350 ft. (not including the 16-foot-tall mechanical penthouse exempt from height calculations under Section 206(b)(1)(A)), the project would be about 35 ft. lower than the maximum allowable height of 385 feet. The S bulk designation controls building dimensions, floor sizes and bulk through Downtown Plan Bulk Control Zone Charts B and C. Essentially, these bulk controls require setbacks, smaller floor sizes and slimmer building profiles with increased building height. The controls requires a base zone not exceeding 1.25 times the width of the widest abutting street (in this case, both Howard and Beale Streets are about 82.5 ft. wide), delineated by a setback, cornice or other architectural feature. The base of the project would be about 95 ft. tall and consist of floors one through eight. The maximum height allowed by the controls is 103 feet (1.25 x 82.5 = 103 ft.).

The project's lower tower would extend from the building base, at about 95 ft. to a height of about 220 ft.; the upper tower would extend above this to a height of about 350 ft. with a 16 ft.-tall mechanical penthouse on top. With a maximum and average floor area of 16,750 sq. ft., a diagonal dimension of about 170 ft. and a maximum length of 155 ft., the project would be within the lower bulk limits (a maximum average floor are of 17,000 sq. ft., a maximum floor area of 20,000 sq. ft., maximum diagonal dimension of 190 ft., and a maximum length of 160 ft.) specified in the City Planning Code. For a 350 ft.-tall building with a lower-tower floor size of about 16,750 sq. ft., the "S" bulk controls require a volume reduction in the upper tower (above about 160 ft.) of about 27%; the project would have a volume reduction of about 29%.

The maximum length and maximum diagonal dimensions in the upper tower of the project would be about 130 ft. and 145 ft. respectively, within the upper tower bulk limits of 130 ft. and 160 ft. respectively, permitted by the City Planning Code. With a maximum and average upper tower floor area of about 11,800 sq. ft. the project would be within the maximum areas specified by the City Planning Code (maximum average floor size of 12,000 sq. ft. and maximum floor area of 17,000 sq. ft.).

The City Planning Code requires usable indoor or outdoor open space, accessible to the public, as part of new downtown development. The ratio of usable open space to new building space in the

C-3-0 (SD) is one sq. ft. of open space for every 50 sq. ft. of area with an open space requirement (Section 138), or about 397,020 sq. ft. for the project, yielding an open space requirement of 7,940 sq. ft. The project would include 8,600 sq. ft. of exterior open space on the project site.

The City Planning Code requires that shadows on publicly accessible open space be minimized (Section 147). New buildings are to be shaped, consistent with the dictates of good design and without unduly restricting the development potential of the site, to reduce substantial shadow impacts. Among the factors for the determination of shadow impact are: amount of area shadowed; duration of the shadow; and the importance of sunlight to the utility of the type of open space being shadowed. (See pp. 74 to 88 for a discussion of shadow impacts of the project.) The sunlight ordinance implemented by Section 295 of the City Planning Code requires disapproval of any project shading Recreation and Park Department property between one hour after sunrise and one hour before sunset, unless adverse effects of such shadows are found to be insignificant by the City Planning Commission, in consultation with the Recreation and Park Commission. The project would not add any new shadow to the closest open space currently under the jurisdiction of the Recreation and Park Department (Justin Herman Plaza at the Embarcadero Center to the northwest of the site).

The City Planning Code requires that ground-level winds may not exceed, more than ten percent of the time year round between 7:00 a.m. and 6:00 p.m., 11 mph in areas of substantial pedestrian use and seven mph in public seating areas (Section 148). The project would not exceed any of these wind limits. (See pp. 88 to 90 for a discussion of wind impacts of the project.)

The City Planning Code requires 0.1 off-street freight loading space for every 10,000 sq. ft. of gross floor area-applicable office space. Loading spaces for retail use are not required if the area of retail use applicable to the project's gross floor area is 10,000 sq. ft. or less (Section 152.1). Four off-street freight loading spaces would be required for the project. Under section 153(a)(6) of the City Planning Code, in the C-3 District a substitution of two service vehicle spaces for each required off-street freight loading space may be made, provided that a minimum of 50 percent of the required number of spaces are provided for freight loading. The project would provide two full-size freight loading spaces and four van spaces (an equivalent total of four full-size freight loading spaces under Section 153(a)(6)).

NOTES - Land Use and Zoning

/1/ The Mission Bay EIR also analyzes impacts for year 2020, the estimated build-out date of the Mission Bay Project. The 2020 cumulative impacts scenario was necessary for the purposes of evaluating the Mission Bay Project in an appropriate context; however, the reliability of forecasts for that distant timeframe is more speculative and subject to change than the forecasts for 2000.

/2/ The C-3 district forecasts in the South of Market and Mission Bay Final EIRs supersede earlier forecasts for the C-3 District presented in the Downtown Plan Final EIR.

/3/ The forecasting method and background is described in the Downtown Plan EIR (pp. IV.B.1-8, IV.B.12-43, IV.B.54a-61, and Appendicies G and H). In addition, the forecasts of future office space and employment, and an explanation of the methods used, can be found in the South of Market Plan EIR, pp. 66-85 and Appendix B, and in the Mission Bay EIR Vol. II. pp. VI.B.13-28, VI.B.38-79, VI.B.106-112, and VI.B.119-123, and Vol. III, Appendix B (see especially Mission Bay EIR Appendix B, pp. XIV.B.24-30 for a comparison to the Downtown Plan EIR forecasts). The method was not changed in forecasts prepared for the South of Market and Mission Bay EIR analyses, but several changes were made in the analysis and results.

/4/ Discussion on the effect of the possible CalTrain extension on the 300 Howard Street project is based on information provided by Morrison-Knudsen Engineers, Inc., and conversations with Willard D. Weiss, P.E., Engineering Manager, Morrison-Knudsen Engineers, Inc., November 5 and 6, 1990.

B. ARCHITECTURAL AND HISTORIC RESOURCES

The Marine Electric Company building on the project site is listed as a Category III - Contributory building in the Downtown Plan, received a "B" rating in the Heritage Survey and was rated "1" in the 1976 Department of City Planning Architectural Inventory. Appendix B, pp. A.31-34, contains a discussion of the ratings systems used in these three architectural surveys.

The Marine Electric Company building would be rehabilitated as part of the proposed project. The rehabilitation would consist of seismic retrofitting and exterior and interior work. The exterior brickwork would be cleaned and repointed, and wood window and door frames replaced as necessary. The existing Howard and Fremont Street facade treatment, including the cornice, would be extended to integrate all four sides of the building if the former Fremont House site was developed as a part of the project open space. The interior would be rebuilt to accommodate proposed uses.

The project sponsor can use the State Historic Building Code and has the opportunity to take advantage of Investment Tax Credits pursuant to the Tax Reform Act of 1986.

C. URBAN DESIGN

The project would construct a high-rise structure similar in scale to existing and proposed high-rises in the South of Market area and contrasting in scale with older South of Market development. The three-story Marine Electric Company Building, designated a Category III Building in the San Francisco Downtown Plan, would be retained and upgraded as part of the project. The project would be taller than most development in the project vicinity. The project would be similar in scale to but about five stories higher than the recently completed 301 Howard Street Building, located across Howard Street from the project site.

The proposed office tower would contain a base, a lower tower, and an upper tower, defined by building setbacks. The building would extend to the property lines along Beale and Howard Streets, and would setback at the eighth level on the north (Transbay Transit Terminal ramp) side to separate the base and the lower tower, and at the eighteenth level on the north (Transbay Transit Terminal ramp), east (Beale Street), and west (proposed open space) sides to separate the lower tower and the upper tower. The Howard Street elevation would remain flush to the property line. The building would also be setback at the eighth level at all building corners.

Setbacks above the base and at upper levels of the project are intended to reduce the apparent bulk of the building. The bottom three stories of the proposed building would extend towards the Marine Electric Company building on the southern portion of the site; the height of this element is intended to relate to the height of the Marine Electric Company building and neighboring existing development. The facade of the new office building would consist of a three to four foot high granite wainscot at ground level with light-toned limestone above to the third level cornice line. Above that, the building would be clad with light-toned precast concrete panels. The double-height ground floor and ground-level retail space is designed to provide pedestrian interest. The rehabilitation of the Marine Electric Company building would consist of seismic retrofitting and exterior and interior work. The exterior brick work would be cleaned and repointed, and wood window and door frames repaired or replaced as necessary. The existing Howard and Fremont Street facade treatment, including the cornice, would be extended to integrate all four sides of the building, if the Fremont House site is developed as a part of the project open space. The interior would be rebuilt to accommodate proposed uses. Open space, including a pedestrian accessway between the office tower and Fremont Street, would be developed in a ground level plaza between the tower and the Marine Electric Company building.

The 27-story tower portion of the proposed project would be most visible on the City's southern skyline viewed from the east, west and south. The tower would be visible from long-range viewpoints as well as neighboring buildings and street-level areas in surrounding blocks (see Figures 14 to 17, pp. 75 to 78). The project would be visible from Potrero Hill and from Twin Peaks in front of other high-rise development as part of the Downtown office district (see Figures 18 and 19, pp. 79 and 80).

The project would not be visible from Nob Hill due to intervening high-rise structures. From portions of the San Francisco - Oakland Bay Bridge the project would be visible in the cluster of high-rise structures west of the San Francisco waterfront and south of Market Street. The project would appear as part of the downtown skyline's southern edge from southern approaches to the City, including the James Lick Skyway and Interstate 280 (I-280).

D. SHADOW AND WIND

SHADOW

Open space in the project vicinity includes the Transbay Transit Terminal staging area, at the southeast corner of First and Mission Streets; the 100 First Street Sun Terrace; the Golden Gate University entry and seating area on the north side of Mission west of First Street; Tishman Plaza on the north side of Stevenson west of First Street; Metropolitan Plaza on the south side of Market east of First Street; Fremont Center Plaza on the east side of First north of Mission Street; 425 Market Street Plaza on the west side of Fremont north of Mission Street; 333 Market Street Plaza on the south side of Market at the corner of Fremont and Market; Bechtel Plaza occupying areas on the east side of Fremont and the west side of Beale north of Mission Street; PG&E Plaza on the east side of Beale north of Mission Street; and Pacific Gateway Plaza on the northern portion of the block bounded by Beale, Mission, Main and Howard Streets. Approved but not yet constructed publicly accessible private open spaces in the project vicinity include the 524 Howard Street, 101 Second Street, 222 Second Street, and 299 Second Street projects that will include open space in the form of greenhouses and arcades.

The nearest open spaces protected by Proposition K, the Sunlight Ordinance (Section 295 of the City Planning Code), in the vicinity of the project are Union Square to the northwest, St. Mary's Square to the north and the Embarcadero Center to the northeast, each of which is several city blocks from the project site. In addition, the proposed Rincon Park (located along the Embarcadero between Howard and Harrison Streets) would be subject to Proposition K protection if it were to be designated for acquisition by the Recreation and Park Commission.

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 14
Photomontage from Mission and
Beale Streets Looking South

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 15
Photomontage from Howard and First Streets Looking East

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 16
Photomontage from Howard and Spear Streets Looking Northwest

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 17
Photomontage from Beale and Harrison Streets Looking North

MAJOR STRUCTURES EXISTING, PROPOSED AND UNDER CONSTRUCTION

1 Bank of America	4 101 Second Street (approved)	7 75 Hawthorne	10 524 Howard (approved)	13 299 Second Street (approved)
2 Transamerica	5 222 Second Street (approved)	8 100 First Street	11 Embarcadero 4	14 301 Howard Street
3 525 Market	6 101 California	9 Fremont Center	12 Pacific Gateway	15 PROJECT

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure 18
Long Range View of Project From Potrero Hill

MAJOR STRUCTURES EXISTING, PROPOSED AND UNDER CONSTRUCTION

1 Bank of America	4 Pacific Gateway	7 Pacific Telephone	10 299 Second Street (approved)
2 345 California	5 100 First Street	8 524 Howard (approved)	11 301 Howard Street
3 Fremont Center	6 101 Second Street (approved)	9 222 Second Street (approved)	12 PROJECT

SOURCE: Environmental Science Associates, Inc.

300 Howard Street ■

Figure 19
Long Range View of Project From Twin Peaks

Shadow patterns for existing and approved buildings in the project area (including the existing building on the site) and the project are shown for 10:00 a.m., noon and 3:00 p.m. for the four seasons: during winter and summer solstices when the sun is at its lowest and highest, and during the spring and fall equinoxes when the sun is at its midpoint (see Figures 20 to 23, pp. 82 to 85). Conditions from July through November mirror the conditions from January through May (using solar time). The analysis includes shadows cast on streets, sidewalks, pedestrian areas, and open space in the area potentially affected by the proposed project. A shadow outline of the project as though cast on the ground, without intervening buildings, is shown to illustrate the scale of the project shadow in relation to the shadows cast by structures that would surround it. Figures 20 to 23 show existing and approved building shadows and net new shadow due to the project.

December 21 (PST)

At 10:00 a.m. Pacific Standard Time (PST) on December 21 (see Figure 20, p. 82), the project would add new shadow to the west side of Beale Street extending for about 110 feet south from the Beale / Mission intersection, the east side of Beale extending about 270 feet north from the northeast corner of Beale and Mission Streets, and to the PG&E Plaza. At noon, the project would add new shadow to about 120 feet of the west side of Beale Street next to the east ramp of the Transbay Transit Terminal, to the east side of Beale Street extending about 40 feet south from the entrance of the U.S. 101 / I-80 Freeway on-ramp, a portion of the east ramp of the Transbay Transit Terminal, a portion of the Embarcadero Freeway on-ramp at Beale and Mission Streets, the southern portion of the Pacific Gateway Plaza between Beale and Main Streets, and a small portion of the center of Main Street near its intersection with Mission Street. At 3:00 p.m. the project would add new shadow to the west side of Beale Street extending about 110 feet north of the Beale / Howard intersection, on the east side of Beale extending about 120 feet north of the Beale / Howard intersection, a portion of the east ramp of the Transbay Terminal, a portion of the on- and off-ramps of the U.S. 101 Freeway, the east side of Main Street extending about 160 feet north from near the Main / Howard intersection, the building at the northeast corner of Main and Howard Streets, and a very small portion of the Rincon Center at Spear and Howard Streets.

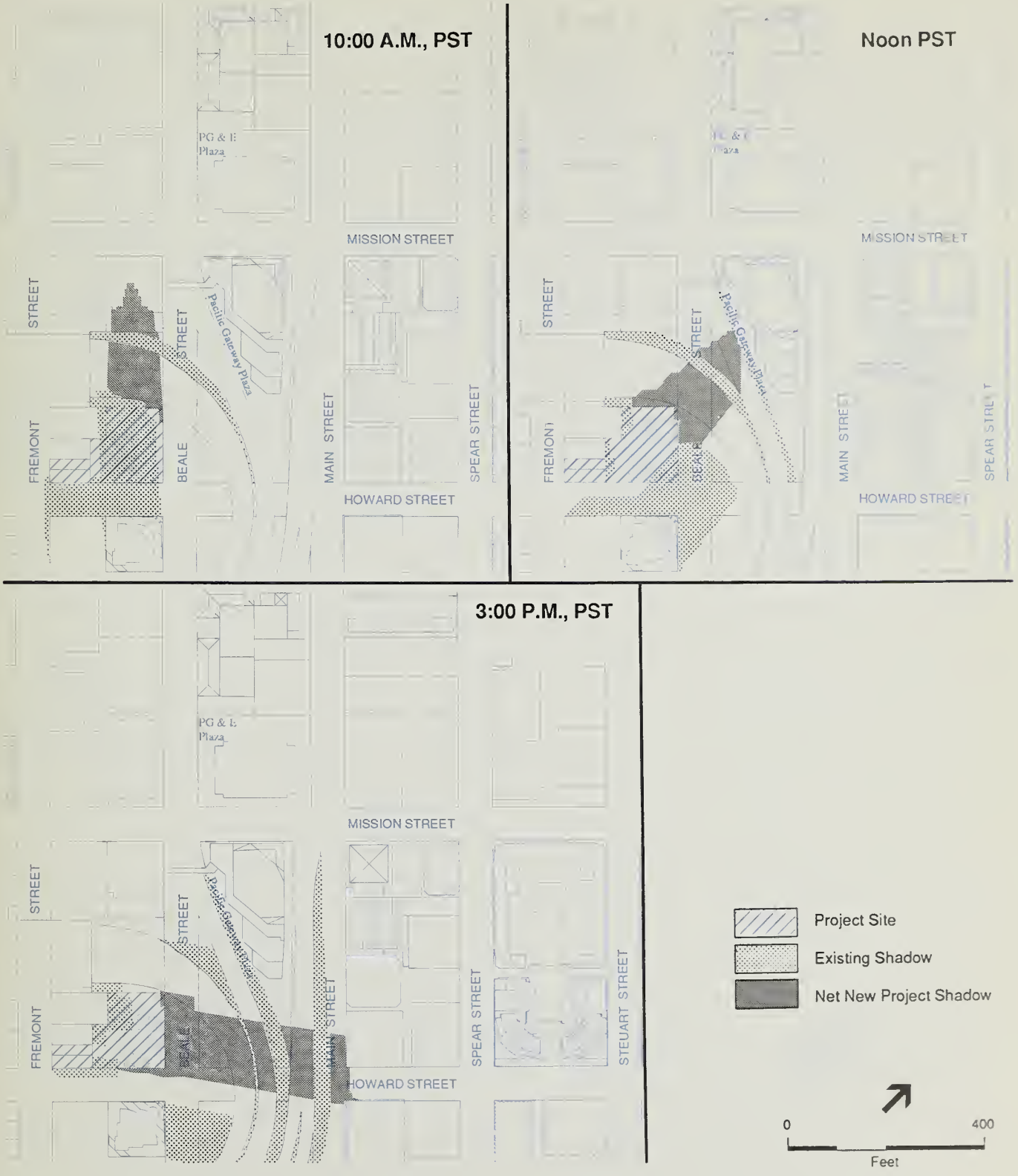
March 21 (PST)

At 10:00 a.m. PST on March 21 (see Figure 21, p. 83), the project would add new shadow to the sidewalk on the western side of Beale Street extending about 30 feet south of the south side of the east ramp of the Transbay Transit Terminal, a portion of the east ramp of the Transbay Transit Terminal, and a portion of the buildings at the southwestern corner of the Beale / Mission intersection. At noon the project would add new shadow to the west side of Beale Street

SOURCE: Environmental Science Associates, Inc.

300 Howard Street ■

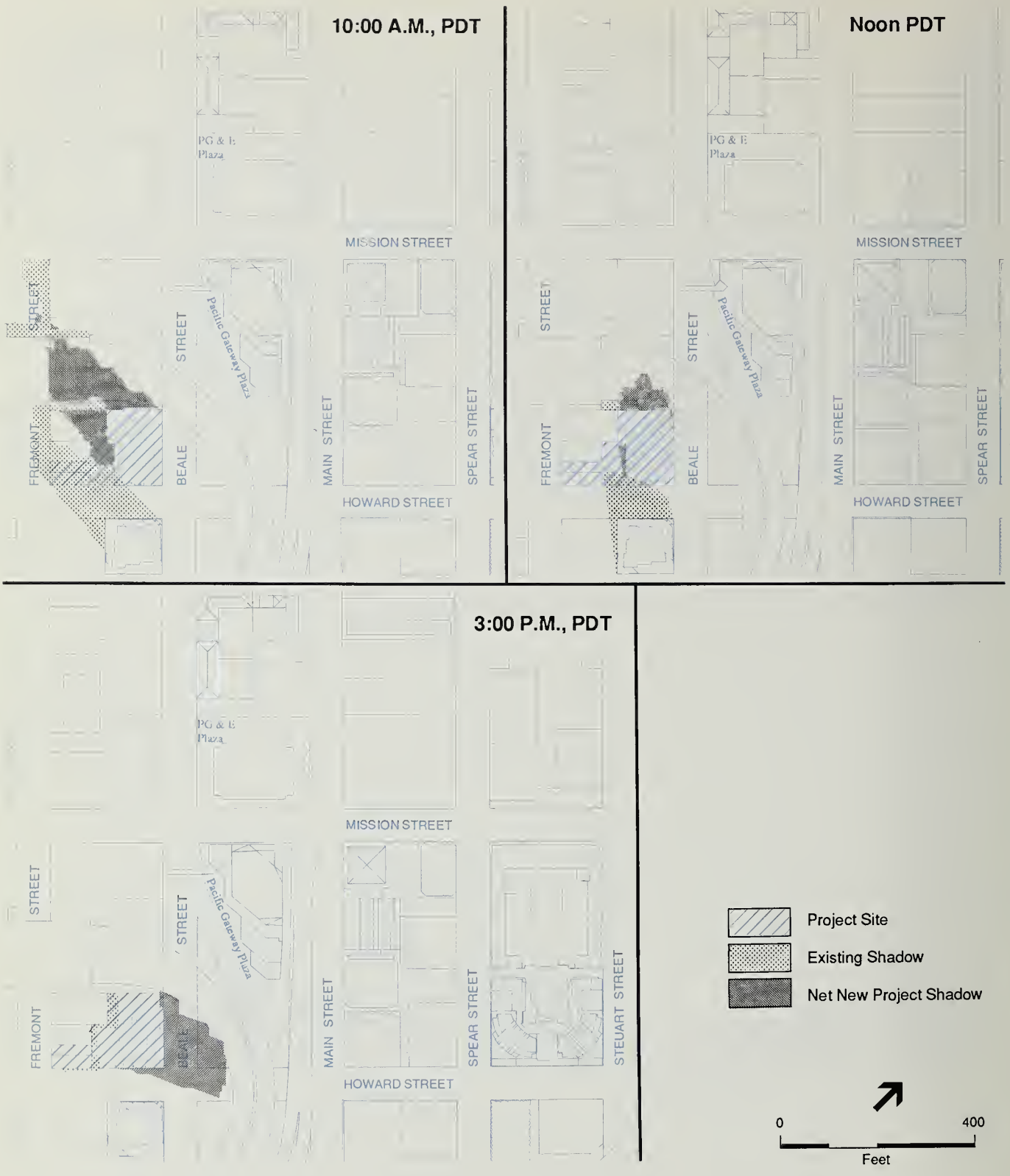
Figure 20
Project Shadow Pattern
December 21



SOURCE: Environmental Science Associates, Inc.

300 Howard Street ■

Figure 21
Project Shadow Pattern
March 21



SOURCE: Environmental Science Associates, Inc.

300 Howard Street ■

Figure 22
Project Shadow Pattern
June 21

SOURCE: Environmental Science Associates, Inc.

300 Howard Street ■

Figure 23
Project Shadow Pattern
September 21

extending about 90 feet south of the south side of the east ramp of the Transbay Transit Terminal, the east side of Beale extending about 55 feet south from near the intersection of Beale and the on-ramp of the U.S. 101 Freeway, a portion of the east ramp of the Transbay Transit Terminal, and the on-ramp of the U.S. 101 Freeway near its intersection with Beale Street. At 3:00 p.m. the project would add new shadow to the north side of Howard Street directly in front of the project site extending about 120 feet west from the Beale / Howard intersection, to the west side of Beale in front of the project site extending about 190 feet north from the Beale / Howard intersection, the east side of Beale extending 130 feet north from the Beale / Howard intersection, the north side of Howard Street extending 70 feet east from the Beale / Howard intersection, the east ramp of the Transbay Transit Terminal, the on- and off-ramps of the U.S. 101 Freeway, the east side of Main Street extending about 40 feet north from the Main / Howard intersection, and the north and south sides of Howard Street extending about 10 and 30 feet east respectively from the Main / Howard intersection.

June 21 (PDT)

At 10:00 a.m. Pacific Daylight Time (PDT) on June 21 (see Figure 22, p. 84), the project would add new shadow to the northern portion of the project's proposed open space and a portion of the east ramp of the Transbay Transit Terminal. At noon the project would add new shadow to a small portion of the east side of the project's proposed open space, the east ramp of the Transbay Transit Terminal, and about 30 feet of the sidewalk along the west side of Beale Street immediately south of the east ramp of the Transbay Transit Terminal. At 3:00 p.m. the project would add new shadow to the north side of Howard Street immediately in front of the project site extending about 120 feet west from the Beale / Howard intersection, the west side of Beale Street immediately in front of the project site extending about 180 feet north from the Beale / Howard intersection, a portion of the street area of the Beale / Howard intersection, the east side of Beale Street extending about 120 feet north from the Beale / Howard intersection, the north side of Howard Street extending about 70 feet east from the Beale / Howard intersection, and a small portion of the east ramp of the Transbay Transit Terminal.

September 21 (PDT)

At 10:00 a.m. PDT on September 21 (see Figure 23, p. 85), the project would add new shadow to the east ramp of the Transbay Transit Terminal, and the buildings north of the Transbay Transit Terminal fronting onto Fremont, Mission, and Beale Streets. At noon the project would add new shadow to the west side of Beale Street extending about 40 feet from the south side and 30 feet from the north side of the east ramp of the Transbay Transit Terminal, the east side of Beale

Street extending about 90 feet north from the north side of the east ramp of the Transbay Transit Terminal, the east ramp of the Transbay Transit Terminal, and the center of Beale Street north of the east ramp extending into the intersection of Beale and the on-ramp of the U.S. 101 / I-80 Freeway. At 3:00 p.m. the project would add new shadow to the west side of Beale Street immediately in front of the project site extending about 190 feet north from the Beale / Howard intersection, the east side of Beale Street extending about 120 feet north from the Beale / Howard intersection, the east ramp of the Transbay Transit Terminal, a portion of the parking lot at the southeastern corner of the block bounded by Beale, Howard, and Main Streets, and the on- and off-ramps of the Embarcadero Freeway.

Open Space

The shadow studies show that the project would add new shadow to existing private open space areas in the project vicinity. On December 21 at 10:00 a.m. the project would shade the PG&E Plaza on the east side of Beale Street, which is primarily used by pedestrians entering and exiting the PG&E building. On December 21 at noon the project would shade part of the Pacific Gateway Plaza facing onto Beale Street and the U.S. 101 Freeway on-ramp. The Pacific Gateway Plaza is used at lunchtime by workers in the vicinity. The new office tower would also shade the project's open space during the a.m. hours of June 21.

The Sunlight Ordinance (Proposition K)

In June 1984, the voters of the City and County of San Francisco approved Proposition K, the Sunlight Ordinance (City Planning Code Section 295) prohibiting the issuance of building permits for structures that would shade property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission (unless the City Planning Commission determines that such shade would have an insignificant adverse impact on the use of such property).

In January 1989, the City Planning and Recreation and Park Commissions adopted shadow criteria for all 15 parks in the C-3 districts. These districts have the greatest potential for new shadow on parks because of the permitted height limits. The commissions: 1) set an Absolute Cumulative Limit for new shadow for each open space; 2) (where new shadow is allowable) projected individual building impacts and allocated a portion of the additional allowable shadow among specific projects, within the Absolute Cumulative Limit; and 3) set forth qualitative criteria for new shadow. This information provides an update on the sunlight ordinance.

The proposed Rincon Park open space in the Rincon Point / South Beach Redevelopment Area, located along the Embarcadero between Howard and Harrison Streets, is not currently under the jurisdiction of the Recreation and Park Commission. However, if this proposed park were to be designated for acquisition by the Recreation and Park Commission, it would be subject to Proposition K protection. Based on currently available preliminary concept plans for Rincon Park, shadow from the proposed project would not reach the open space at any time of the year. During the winter months, when shadows are longest, shadow from the project would approach the proposed park site but would not reach the park site because of intervening buildings and the elevated Embarcadero Freeway west of the proposed park site. Based on available preliminary concept plans for the park site, should the Embarcadero Freeway be dismantled, those shadows from the project would still be precluded by existing buildings and would therefore not reach Rincon Park.

Figure 24 shows the maximum extent of project shadow as though cast on the ground without existing intervening structures.

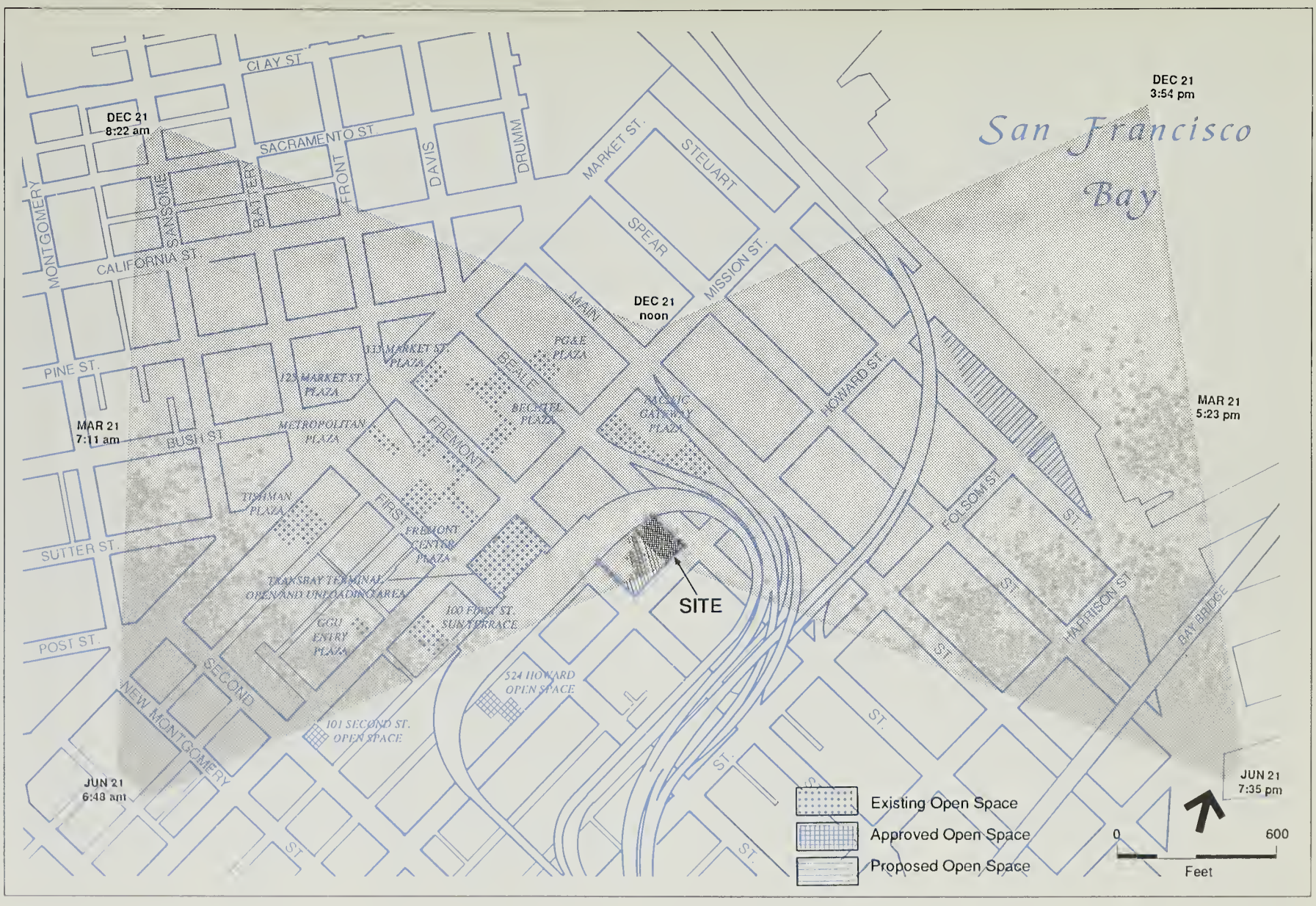
Sunlight Access to Public Streets

The City Planning Code (Section 146(a)) includes sun access criteria to allow direct sunlight to reach sidewalk areas of designated streets during critical hours of the day. In the case of sidewalks, the critical hours are considered to be the hours around noon. New shadows cast by the project would not affect any of the streets listed in Section 146(a).

WIND/1/

Prevailing winds in San Francisco are from the northwest, west-northwest, west and west-southwest. Wind tunnel measurements were made at 23 surface locations near or within the project site for each of the prevailing wind directions using a scale model of the site, the project and vicinity. The model was used to test the following configurations: existing conditions; existing conditions plus the 300 Howard Street project; and existing conditions plus project Alternatives B and C presented and analyzed in Chapter VIII, Alternatives, pp. 144-153. The study included separate tests for each of San Francisco's four major prevailing wind directions: northwest, west-northwest, west and west-southwest. Existing conditions included the approved 524 Howard Street, 222 Second Street, 101 Second Street, and 299 Second Street developments.

Wind test data were combined with wind records to predict the wind speeds that would be exceeded 10% of the time at each of the 23 test locations. The predicted winds were then



SOURCE: San Francisco Department of City Planning; Environmental Science Associates, Inc

300 Howard Street ■

Figure 24
Year Round Shadow Trace

compared to the comfort and hazard criteria in Section 148 of the City Planning Code, as established by the Downtown Plan. (See Appendix C, pp. A.35-39, for a summary of the full wind analysis. The locations of the measurement points and the results of the wind tunnel study, including compliance with the comfort criteria are shown and summarized in Appendix C, Figure C-1, p. A.38). Throughout the following discussion, the wind speeds reported refer to the equivalent wind speeds that would be exceeded ten percent of the time./2/

Existing wind speeds are 3 mph to 11 mph at the 23 locations tested. Existing winds at all test locations meet the 11 mph pedestrian comfort criterion. As there are no existing seating areas in the project vicinity, the seven mph seating comfort criterion is not applicable at any of the test locations for the existing setting.

The project would cause wind speeds to increase at 5 of 23 test locations, to remain the same at 5 locations, and to decrease at 12 locations. One location (location 23 on Figure C-1) was not tested for the existing setting because this location was within the Fremont House building which was not yet demolished at the time the wind study was conducted. At the one test location within sitting areas created by the project (location 4), winds would satisfy the seven mph comfort criterion.

NOTES - Shadow and Wind

/1/ This section is based on a study entitled "Wind Tunnel Study of the 300 Howard Street Building," July, 1990, prepared by Dr. Bruce White for Environmental Science Associates, Inc. A summary of the report is included in Appendix C, pp. A.35-39; the complete report is on file and available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street.

/2/ Equivalent windspeed is an hourly wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians.

E. EMPLOYMENT AND POPULATION

PROJECT EMPLOYMENT

Removal of the existing 180 space surface parking lot on the project site would result in the loss of two jobs; closure of the restaurant in the Marine Electric Building would result in the displacement of four employees. The restaurant at 193 Fremont Street (currently the vacant lot on the site) employed nine people prior to its closure after the October 1989 earthquake.

At full operation, the project would accommodate about 1,615 workers on the site, consisting of about 1,530 office workers, 45 retail workers, and 40 building maintenance/security/parking workers./1/ The 1,615 employees accommodated by the project would represent about one-half percent or less of the C-3 total employment in 2000. The impact would be about 2.3% of citywide growth between 1985 and 2000.

The project would accommodate growth of office and retail employment in the C-3 District. It is expected that office businesses providing management, technical, and professional services would occupy the project office space. Over time, the project is expected to be characteristic of C-3 District office buildings occupied by a mix of corporate and business service firms.

About 2,340 additional jobs in the Bay Area would result from the employment multiplier effect of project operation./2/ Construction of the new project would require about 190 person-years of construction labor./3/ Construction labor for the project would represent about 0.3% of the total person years of construction labor forecast for the C-3 District from 1984 through 2000. About 390 additional person-years of employment would be generated in the Bay Area, as a result of the multiplier effect of project construction./4/

CUMULATIVE EMPLOYMENT GROWTH

Forecasts of employment in the Downtown & Vicinity and in the City as a whole have been revised since the Downtown Plan EIR was prepared. The Mission Bay and South of Market Plan EIRs provide these updated forecasts. In summary, employment patterns in the City and the region in the future, particularly in the Greater Downtown, will depend somewhat on the development plan chosen and implemented in the Mission Bay area. The amount of employment growth forecast in the Bay Region would not change, but the location of jobs would be different. South of Market area employment growth is forecast to be relatively small compared to the rest of downtown and would have little influence on growth patterns.

Mission Bay Alternative A, with a combination of residential and commercial uses, would provide about 25,000 job opportunities. Citywide employment, including South of Market and the rest of the City, would grow by about 210,000 jobs between 1985 and 2020 under this scenario. Mission Bay Alternative B includes predominantly residential and open space uses and would provide about 6,000 jobs; citywide employment would grow by about 200,000 jobs and more of this growth would occur in the downtown and in the rest of the City between 1985 and 2020 than under Mission Bay Alternative A. Mission Bay Alternative N, with predominantly commercial and industrial development and no new housing, would contribute to citywide

employment growth of about 207,000 jobs during the same time frame. The South of Market area would contribute about 24,000 jobs to these totals. The Mission Bay Plan approved by the City Planning Commission in September 1990 and currently undergoing review by the Board of Supervisors is similar to Alternative A in employment.

The C-3 District would contribute different amounts to the Citywide employment totals, depending on Mission Bay development at buildout (2020, about 360,800 jobs if Mission Bay Alternative A were the buildout scenario; about 362,200 jobs if Alternative B were the Mission Bay development picture; and about 362,200 jobs if the Mission Bay area were developed under present zoning as in Alternative N. In the year 2000, employment forecasts for the C-3 Districts or the entire city would not reflect as much variation as that indicated for year 2020, because Mission Bay would not be fully developed under any of the three alternatives. In the C-3 District, employment growth would be about 69,000 jobs between 1985 and 2000. (See Mission Bay EIR, Vol. II, pp. VI.B.53-79, and Vol. III, p. XIV.B.24-26; South of Market EIR, Appendix B, pp. B.10-14; and Downtown Plan EIR pp. IV.C.29-61.)

CUMULATIVE HOUSING DEMAND AND POPULATION GROWTH

The Mission Bay and South of Market Plan EIRs discuss residence patterns in a City-wide and regional context, in relation to housing demand from employment growth in the Downtown & Vicinity. San Francisco employment growth, including employment generated by the 300 Howard Street project, will contribute to housing demand throughout the region, as not all San Francisco workers will live in the City. If housing is built as proposed in areas of San Francisco such as Mission Bay, more City workers could live in the City in which case San Francisco would contribute less to housing demand in the rest of the region.

Regardless of the type of development in Mission Bay and in South of Market, the importance of San Francisco employment as a factor affecting regional housing demand will decline over time because more housing will be added in the City relative to job growth, compared to the situation in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. San Francisco workers will require about the same share of the region's housing in the future as they did in the early 1980's. San Francisco's effects on the regional housing market will vary in the future. City workers could become more important to the housing market in some close-in communities with reasonable transportation access to the workplace: the western parts of the East Bay and east of the hills along BART corridors, northern San Mateo County and parts of Marin County. Nevertheless, the price of housing in

San Francisco is expected to remain high relative to other areas in the region. This, combined with continued demand for lower cost housing, would continue to create upward pressure on costs/rents of existing units.

About half of the people working in the Downtown & Vicinity would live in the City in 2000 and 2020. The rest would live in communities throughout the rest of the region: about 30% in the East Bay, 13% in the Peninsula and in the South Bay and about 8% in the North Bay. Downtown & Vicinity workers living in the City would represent about 55% of the City's employed residents in 2000 and 57% in 2020. People working downtown would represent a considerably smaller proportion (about 4-9%) of the employed residents of other Bay Area communities. (See Mission Bay EIR, Vol. II, pp. VI.C.56-61, 83-84 and 92-97, and Vol. III, pp. XIV.C.28; South of Market EIR pp. 66-67.)

The project would comply with the requirements of the Office Affordable Housing Production Program (OAHPP), requiring the provision of about 150 housing units or payment of an in-lieu fee of about $2,740,000 based on the project's proposed 394,780 gross sq. ft. of net new office space (City Planning Code Section 313).

NOTES - Population and Employment

/1/ Employment is calculated from the estimates of sq. ft. of building space from the project description. Based on C-3 District employment density factors from the *San Francisco Department of City Planning, Downtown Plan EIR*, EE81.3, certified October 18, 1984 (268 sq. ft. per office employee; 350 sq. ft. per retail employee; and 12,500 sq. ft. per maintenance/security/parking employee).

/2/ Indirect employment projections are based on *1982 Input-Output Model and Economic Multipliers for the San Francisco Bay Region*, Association of Bay Area Governments, 1988 Update. A multiplier of 1.45 was used for office jobs, 1.24 for retail jobs and 1.64 for maintenance jobs. The multipliers used were the Type I multipliers plus 10% of the difference between Type I and Type II employment multipliers contained in this model.

/3/ William A. Bodrug, Development Manager, Bechtel Investments Realty, telephone conversation, March 26, 1990.

/4/ *1982 Input-Output Model and Economic Multipliers for the San Francisco Bay Region*, Association of Bay Area Governments, 1988 Update. A multiplier of 2.05 (Type I plus 10% of the difference between Type I and Type II) was used for non-residential construction jobs.

F. TRANSPORTATION

CUMULATIVE CONTEXT

Introduction

The transportation sections of the Mission Bay and South of Market Area Plan EIRs address various regional transportation impacts in 2000 (the Mission Bay EIR also analyzes transportation impacts in 2020). The Mission Bay transportation impact analyses evaluate travel generated by Mission Bay in the context of growth in travel projected for the rest of the City and Bay Area. The South of Market analyses do the same for that area. It is growth in the City and region that would result in the greatest impact on most of the transportation systems studied.

Using slightly different analysis methodologies, the two EIRs employ the same basic screenline approach to study regional transportation impacts of San Francisco employment growth. Results differ somewhat, based on the differences in forecasting techniques, but generally by less than five to ten percent; this difference is well within the range of accuracy of ten year forecasts. Therefore, the two sets of results are compatible. This summary of cumulative transportation effects will report largely from the Mission Bay EIR, with South of Market EIR results included where there is notable relevant information.

In summary, both EIRs show that by 2000, congested highway conditions would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

The proposed project at 300 Howard Street is expected to be completed, occupied and the amount of net new space in the downtown attributable to the project absorbed by 2000. Therefore, the impacts of the project and its contribution to cumulative transportation impacts would occur primarily in the 1985-2000 context. The information from the Mission Bay EIR for 2020 was prepared for the purposes of analyzing full buildout impacts of Mission Bay in a proper cumulative context, and is more speculative and subject to change. It is presented for the reader's information.

The Analysis Years

The Mission Bay EIR analysis includes studies of transportation conditions in the year 2000, and, in order to account for buildout of the Mission Bay planning area, in the year 2020. Analyses for the 1985-2000 timeframe can rely on reasonably confident estimates of regional transportation capacity improvements as defined by the regional agencies' highway and transit planners. There are no regional transportation plans or policies for 2020. Therefore, the Mission Bay EIR uses a different approach for this longer-term analysis. For the 2020 analysis, rather than reporting the impacts of future travel on transportation systems as is the analytical approach for 2000, the estimates of 2020 travel conditions use the transportation system capacities developed for 2000 as a base and identify the types of transportation improvements likely to be necessary to serve growth in travel between 2000 and 2020.

Effects of the Loma Prieta Earthquake

While many of the downtown streets and intersections have experienced changes in traffic volumes as a result of closure of damaged freeway segments, most of them are expected to be only temporary. As freeway repairs are completed, traffic is expected to return to its pre-quake patterns. Although not all repair plans have been finalized, it has been necessary to make certain assumptions about the transportation system that would be in place by the year 2000 to provide a reasonable assessment of future conditions. The following two future scenarios were the basis for the transportation analysis:

- *Freeway Up Scenario.* All freeways, including The Embarcadero, I-280, and U.S. 101 were assumed to be back in full operation as in pre-quake conditions. The highway impacts discussion below, under "Regional Travel," as reported in the Mission Bay and South of Market EIRs, reflects projected levels of service assuming those pre-quake travel distribution patterns.

- *Freeway Down Scenario.* The Embarcadero Freeway is assumed to be removed and replaced with a surface roadway from the Mission / Main and Mission / Beale Street ramps north. The Main / Beale ramps, or a comparable facility, were assumed to be fully operational. U.S. 101 ramps at Turk and Golden Gate Streets and the section of I-280 between the U.S. 101 interchange and Army Street were assumed to be repaired or replaced with facilities of comparable capacity. The primary effect of this scenario would be that traffic patterns on San Francisco's local street system that served The Embarcadero Freeway would operate differently than before the earthquake; cumulative travel impacts as they would affect the regional highway and transit screenlines reported in the Mission Bay and South of Market EIR analyses may be the same or lower. Therefore, the "Regional Travel" discussion below regarding impacts on highways and regional transit would still be applicable, if not an overstatement of cumulative impacts on the regional highway and transit systems serving San Francisco./1/

Regional Travel

Regional travel was analyzed for each of the three major approaches to San Francisco: the North Bay via the Golden Gate Bridge; the East Bay via the San Francisco-Oakland Bay Bridge; and the Peninsula via the U.S. 101 and I-280 freeways.

The regional travel forecasts assume that where severe congestion is projected for the highway system and where parallel transit and ridesharing systems are available, travelers would choose to shift from their autos to fill the capacity available in transit and ridesharing systems. Those shifts are assumed to be made by travelers from the Downtown & Vicinity only, because they would have more transit and ridesharing options than travelers from other parts of the City or region. The shift to transit and ridesharing would be greatest for travel to the East Bay, somewhat less to the North Bay, and none would be expected for travelers to the Peninsula by 2000. (Mission Bay EIR, Vol. II, pp. VI.E.76-79; South of Market Plan EIR, pp. 109-112, C-38-40).

Growth in the entire Downtown & Vicinity, including the South of Market and Mission Bay, and the rest of the region would be the primary source of travelers trying to cross the Golden Gate and Bay Bridges, and to use the U.S. 101 and I-280 freeways at peak hours. (Mission Bay EIR, Vol. II, pp. VI.E.71-83; South of Market EIR, pp. C-46-47.)

North Bay Corridor

The Mission Bay and South of Market EIRs found that the Golden Gate Bridge and its approaches operated with moderate congestion (driving speeds of about 35 to 45 mph) in peak hours in 1985. By 2000, heavy congestion on the bridge (a driving speed of about 30 mph) would last about two hours during the p.m. commute period if additional transit capacity between downtown and the North Bay were provided, and a substantial shift from autos to transit and ridesharing were made by travelers from the Downtown & Vicinity. If no shift from 1985 transit use levels were to occur, the period of heavy congestion on the Bridge would last for about four hours in 2000.

Golden Gate Transit indicates that it would be able to increase its bus and ferry capacity between downtown and the North Bay by 2000 in response to the demand generated. Golden Gate Bus ridership would almost double, with projected Levels of Service (LOS) of D during the p.m. peak hour and LOS C during the p.m. peak period. Golden Gate ferry ridership would grow by about 60% from 1985 to 2000 and operate at LOS B during the p.m. peak hour and period. Ridesharing is projected to increase by 7 to 15% between 1985 and 2000 in the North Bay.

By the year 2020, heavy congestion on the Golden Gate Bridge could last about four hours, assuming the levels of transit and ridesharing used in 2000, if there were no additional transportation improvements between 2000 and 2020. The Mission Bay EIR indicates that, by that time, the need to consider major new transportation infrastructure and transit systems will have become apparent. The Mission Bay EIR provides examples to illustrate the magnitude of improvements that could be necessary; those mitigation measures therefore are not prescriptive, but indicative of the level of investment required to respond to future travel demand, which would require in-depth review and analysis in the next phase of regional transportation planning. Those mitigation measures include adding a second deck to the Golden Gate Bridge to provide transbay capacity for new bus and carpool lanes, or a light-rail line, either of which would extend between downtown San Francisco and Sonoma County. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 39, 41, 71-92, 94-125, 129-134, 214-215, and 225-226; South of Market Plan EIR pp. 98-105, and 111-124.)

East Bay Corridor

There currently is virtually no room for additional vehicle traffic on the eastbound Bay Bridge approaches between 4:00 p.m. and 6:00 p.m. While the growth in travel demand on the Bay Bridge from the Downtown & Vicinity could be served by shifting those commuters from autos to transit and increased ridesharing, trips to or from other areas of the region generally are not well served by transit and would continue to be made primarily in private vehicles.

Even with the substantial shift to transit and ridesharing assumed in the analysis for travelers from the Downtown & Vicinity, the Bay Bridge would operate at capacity for about 4.5 hours in 2000, resulting in severe congestion on the San Francisco approaches to the bridge, travel speeds of less than 30 miles per hour, and heavy congestion on the bridge itself every weekday afternoon. Were the shift to transit and ridesharing from 1985 levels not to occur, the period of severe congestion in 2000 would extend for more than 5.5 hours.

By 2000, the numbers and proportion of commuters from the Downtown & Vicinity on BART during the p.m. peak period would be substantially higher. The number of trips on AC Transit would increase by about 65% based on the service available and the need to accommodate some riders that would otherwise use BART if ridership conditions were less crowded by 2000.

The ratio of passengers to seats on BART would increase from 1.30 in 1985 to 1.63 in 2000 (LOS F). AC Transit ridership would increase from 0.85 passengers per seat in 1985 to 1.30 in

2000 (LOS E). The capacity of BART is based on the maximum capacity of BART's computer system to track trains. The crowding projected for BART could not be fully mitigated during the peak period because of the system's technical operating limits.

An increase of seven percent in ridesharing from the Downtown & Vicinity across the Bay Bridge is projected for 2000. Even with substantial shifts to transit and ridesharing by commuters from the Downtown & Vicinity, by 2020 severe congestion on the Bay Bridge and its approaches would last for more than five hours. The number of regional vehicle trips which could not be served by the Bay Bridge during the p.m. peak period (4:00-6:00 p.m.) would grow from about 3,100 vehicles in 2000 to about 5,800 in 2020.

Mitigating those levels of congestion would require consideration of major changes to the regional transbay transportation system connecting the West Bay and East Bay. Virtually all of the concepts would require the City to work with MTC, Caltrans, and local government agencies to undertake the regional planning needed to expand transbay transportation capacity. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 37-41, 71-92, 94-124, 126-127, 129-133, 215-216, and 226-230; South of Market EIR pp. 98-105, and 111-124.)

Peninsula Corridor

Between 1985 and 2000, traffic would increase on U.S. 101 and Interstate 280, the freeways serving the Peninsula. However, there would be less congestion on those routes at the San Mateo County Line than on the Golden Gate and Bay Bridges. Both U.S. 101 and I-280 were only moderately congested at the San Mateo County line in 1985. In or near San Francisco, the capacity of local streets, U.S. 101, and I-280 would be sufficient to handle future travel demand; the switch from highway to transit modes by Downtown & Vicinity commuters assumed for the Golden Gate and Bay Bridges would not be required for the routes serving the Peninsula. The transit analysis for 2000 and 2020 in this regional corridor therefore uses the same amount of transit capacity as in 1985.

U.S. 101 at the San Mateo County line would operate at capacity for about three hours in 2000, with heavy congestion and speeds of 30 miles per hour occurring during that afternoon peak period. By 2020, heavy congestion on U.S. 101 would last for over three afternoon hours. I-280 would operate with only moderate congestion at the county line in 2000 and 2020 with speeds averaging 35 to 45 miles per hour throughout the peak period. The congestion projected in 2020 would be reduced if commuters from the Downtown & Vicinity chose to increase their use of transit or ridesharing above the 1985 levels.

Transit ridership to the Peninsula would grow, although not to the extent that transit capacity would have to be increased above the 1985 levels. In 2000, the level of service on transit would remain high during the p.m. peak period (LOS B or C for all carriers), as there would be no system where ridership would be greater than available seats. Use of BART and SamTrans would grow by about 40% while CalTrain ridership would grow by just 5% (assuming the CalTrain station remains at Fourth and Townsend Streets). In 2020, CalTrain, BART and SamTrans would carry even larger loads, but would continue to operate below capacity (LOS B or C). (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 37-38, 42-43, 61-62, 71-92, 94-124, 127-133, 216-217, and 230-231; South of Market EIR pp. 98-105, and 111-124.)

Regional Highway Constraint Points

As a result of growth in regional travel demand, the following freeway segments lying beyond the screenlines in the transportation analysis could constrain San Francisco travel: the I-80/580/I-880 interchange in Oakland; the Caldecott Tunnel on State Route 24 I-80 in Alameda and Contra Costa Counties, U.S. 101 in Marin County, and U.S. 101 south of I-380 in San Mateo. (Mission Bay EIR, Vol. II, pp. VI.E.133-140.)

Local Transit and Streets

MUNI

To analyze cumulative impacts on MUNI, individual MUNI routes were grouped on the basis of the location of their alignments and stops into the "Northeast," "Northwest," "Southwest," and "Southeast" areas of San Francisco, referred to as "screenlines." By 2000, ridership would generally be accommodated on the MUNI screenlines. Slight overcrowding (LOS E) would occur on the Northwest screenline during the p.m. peak hour, and on the Northeast screenline during the p.m. peak period. However, by 2020, all but the Southwest screenline would be operating beyond MUNI's load standard (an overall average of 1.25 passengers per seat). Additional service required could include new light rail service to the Geary Boulevard corridor to the northwest, and to the Bayshore corridor in the southeast area of the City. (Mission Bay EIR, Vol. II, pp. VI.E.34-35, 93-99, 103-104, 114-124, 129-133, 217, and 231; South of Market Plan EIR, pp. 98-102, 112-117, C-19-21, and C-37.)

Local Streets

The Mission Bay and South of Market EIRs assumed the transportation network that existed before the Loma Prieta earthquake to be in place in the future. The following discussion would be applicable if the Freeway Up Scenario described on p. 95 were implemented.

Severe congestion would continue to occur in both 2000 and 2020 on several of the James Lick (I-80) freeway approaches in the South of Market Area. Those streets and freeway ramps serve traffic destined for the Bay Bridge and Peninsula. Several of those streets are heavily congested now. The number of severely congested I-80 approach intersections would increase by 2000 and increase again by 2020.

The First / Harrison Street, Fifth / Bryant Street, and Sixth / Brannan Street intersections presently operate at LOS F and would continue to do so in the future. Other intersections at or near freeway ramps, such as Fourth and Harrison would deteriorate from LOS B to LOS E or F in the future. Intersections near freeway ramps are often affected by freeway access queues, as cars waiting to enter the freeway back up to or through these intersections. This affects local traffic attempting to use streets in these areas. Some traffic will shift and use less congested routes in the future as this problem increases. Continued enforcement of the ordinance passed in 1987 prohibiting blocking an intersection should help to limit this problem. By 2000, certain improvements to the local street network are planned to be in place, which would facilitate traffic circulation and access to I-280 by travelers from the Downtown & Vicinity. As a result of the I-280 Transfer Concept Program and Mission Bay Plan, King Street would be improved to function as a major roadway, with new on- and off-ramps to I-280. With cumulative development, the new major intersections at Third / King Streets, and Fourth / King Streets are projected to operate at LOS D in year 2000, and LOS E and F in 2020, respectively. Mitigation measures to provide for more left-turn lanes and towaway lanes during commute periods would reduce congestion. (Mission Bay EIR, Vol. II, pp. VI.E., 140-148, 166-175, 200-201, and 218-219; South of Market EIR, pp. 105-106, and 124-126.) The 300 Howard Street project would contribute less than one percent of the traffic at these intersections. It is expected that operating conditions on other local South of Market streets and intersections not serving freeway ramps (or near freeway-serving intersections) would continue to operate in a generally free flowing manner in the future, at least to 2000.

For the local street system to operate at the level described above, there would have to be a high level of public transit use in the Downtown & Vicinity. In 1985, about 55% of all afternoon peak-hour outbound trips from the Downtown & Vicinity were on public transit. That level of

transit could grow to about 70% of all trips, based on the increased capacity of transit systems expected to be available by 2000, and the congestion levels estimated to occur in the future.

As described on p. 95, San Francisco is pursuing a proposal to demolish The Embarcadero Freeway. Under the Freeway Down Scenario, if implemented, the local street system serving The Embarcadero roadway would operate differently than the manner in which it served The Embarcadero Freeway. Generally, queues and delays at intersections would be lengthened along the street corridors leading to remaining Bay Bridge ramps during the afternoon commute. Also, an increase in average delays on the Bay Bridge would be expected during the morning commute period. Any proposal for the construction of a new roadway along The Embarcadero will be subject to separate environmental review.

PROJECT IMPACTS

Travel Demand

On the basis of land use, the project would generate about 8,860 net new person trip-ends (pte) per day./2/ Travel generated by existing retail space (including the recently demolished Fremont House restaurant) on the project site (about 870 pte per day) has been subtracted from the total new travel (about 9,730 pte per day) from the site to give the net new travel from the project./3/ The trip generation calculations include travel to and from the project site by both visitors and employees of the project. Additionally, although expressed on a person trip-end basis, the trip generation includes all travel to and from the project in autos, service vehicles and trucks, on public transit and other modes (i.e., walking, bicycles, taxis, etc.). Projected outbound (peak commute direction) p.m. peak-period and peak-hour trips by mode expected to be generated by the project are shown in Table 4. About 1,287 new outbound trips from the project would occur during the p.m. peak-period, of which about 802 would occur in the p.m. peak hour./4/

Assignments to travel modes for the project have been calculated on the basis of two different sets of modal split assumptions. The first set of assumptions reflect average modal splits as of 1985. The 1985 modal split has been used for the purpose of identifying impacts at the single-project level (as opposed to impacts at the cumulative level). The second set of assumptions reflects modal splits for the year 2000 contained in the Mission Bay EIR./5/ The year 2000 modal splits have been applied to the project travel for the purpose of comparing project travel with cumulative future travel demand on the transportation systems serving San Francisco. The modal splits used were derived from aggregate data for the C-3 District, the

TABLE 4: PROJECTED OUTBOUND TRAVEL DEMAND BY MODE FROM THE 300 HOWARD STREET PROJECT (pte)/a/

Travel Mode	P.M. Peak Period/b/ 1985/c/	2000/d/	P.M. Peak Hour /b/ 1985/c/	2000/d/
Drive Alone	266	208	152	118
Carpool	166	160	96	90
MUNI	366	305	230	188
BART	230	313	153	207
AC Transit	84	104	60	73
SamTrans	14	14	12	12
SPRR (CalTrain)	26	26	18	18
GGT Bus	38	58	27	41
Ferry	7	9	6	7
Other	90	90	48	48
TOTALS	1,287	1,287	802	802

/a/ Person trip-ends.
/b/ The peak hour occurs during the two-hour peak period of 4:00 p.m. to 6:00 p.m.
/c/ The year 1985 modal split was developed from information contained in employer / employee surveys conducted by Recht Hausrath & Associates and household surveys conducted by the Metropolitan Transportation Commission, as described in the Mission Bay EIR, Vol. III, p. XIV.E.5.
/d/ The year 2000 modal split accounts for changes in travel behavior which are assumed to occur as a result of growth in the Downtown & Vicinity, as described in Mission Bay EIR, Vol. II, pp. VI.E 71-78.

SOURCE: Environmental Science Associates, Inc.

zoning district that contains the project site, and the rest of downtown San Francisco. The actual modal split for travel from the project may vary from the average. However, because the average modal split data reflect travel patterns for an area, of which the project site is a part, application of the average modal split data to project travel has been assumed to be sufficiently accurate for purposes of comparison.

Transit

There are about seven MUNI routes with stops within one block of the project site. The Transbay Terminal is located one block northwest from the site; there are four additional MUNI routes that stop there, as well as AC Transit, Golden Gate Transit and SamTrans buses. MUNI

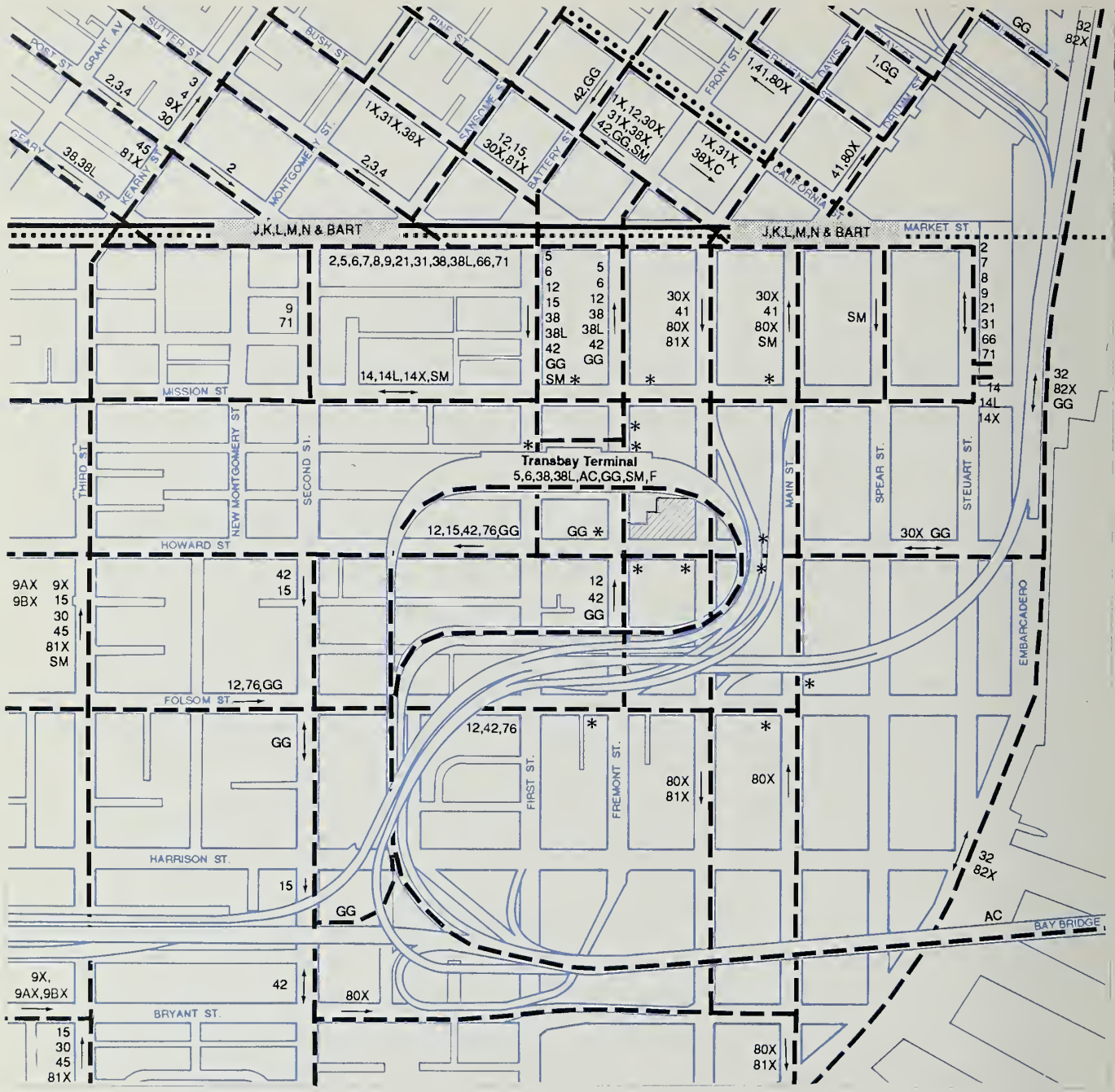
Metro and BART service in the Market Street subway are accessible via the Embarcadero station (two blocks north of the site). Figure 25 shows transit routes in the project area. Photographic examples of p.m. peak-hour loadings on MUNI vehicles are shown in Appendix D, Figure D-1, pp. A.41-43.

During the p.m. peak hour in 1984, most of the transit agencies were found to be operating in Level of Service (LOS) D or better. The exceptions include BART Transbay, where conditions were found to be at LOS F, and MUNI in the northwest and southwest corridors, where operations were found to be in LOS E. Table D-1, Appendix D, p. A.40, contains descriptions of the various LOS for bus transit. In the p.m. peak hour in 2000, about 188 (0.4%) new MUNI trips among all four of the MUNI screenlines, and about 207 (0.5%) new BART trips (transbay and westbay) would be generated by the project. Addition of the project p.m. peak-hour MUNI riders to the existing (1984) MUNI ridership would not increase the loading ratios across any of the screenlines, and thus would not change the LOS. Addition of BART riders from the project to the existing BART ridership also would not increase p.m. peak hour Transbay or westbay loading ratios or change LOS. Existing peak-period and peak-hour transit ridership would be increased by about 0.6%. A ridership increase of this magnitude would not be measurable against the day-to-day fluctuations in transit ridership and would not have a noticeable effect on transit LOS. However, as discussed on pp. 96 to 99, the project would contribute to cumulative increases in transit ridership in the major regional transit corridors leading from downtown San Francisco that would result in a decrease in LOS for several of the transit carriers.

Project Transit Costs

MUNI. The estimated 1985 (most recent available) net marginal cost (or increase in the deficit for MUNI operations) per additional ride is $0.28./6/ This deficit-per-ride figure, because it is a marginal cost, is appropriate for small increases in MUNI ridership (such as that requiring one or a few additional vehicle trips). Assessments of costs that would result from cumulative development require the inclusion of additional cost factors and may be best projected using average costs./7/ It is reasonable to conclude that average costs would be significantly higher than marginal costs.

The project would generate about 153,720 peak-period, peak direction rides per year in the year 2000, which would generate a cost deficit to MUNI of about $43,042, assuming that the cost per ride deficit remains the same./8/ The extent to which this project would offset this deficit through its contributions to the General Fund, the Transit Impact Development Fee, and sales tax revenues is not known. State and federal funds to MUNI are decreasing, and the City is reviewing other options for increased revenues.



Legend

- Project Site
- BART and MUNI Metro Station
- BART Route
- MUNI Metro Route
- Surface Transit Route
- Cable Car Route

- 1, 2, J,K — Route Designation and Direction
- * — Bus Stop (within about one block of Project Site)
- AC — Alameda County Transit Service
- GG — Golden Gate Transit Route
- SM — SamTrans Route

300 Howard Street ■

SOURCE: MUNI San Francisco Street and Transit Map, 1989; AC Transit; Golden Gate Transit Bus & Ferry System Map; SamTrans Bus Route Map

Figure 25
Transit Routes In The Project Area

The sponsor would be required to pay a one-time Transit Impact Development Fee (TIDF) to finance the increased cost of MUNI services necessitated by the project, at a rate of $5.00 per gross square foot of net new office construction. Based on the $5.00 rate, the project would yield about $2.05 million. The final determination of TIDF would be made on the basis of a more detailed review of architectural plans submitted to the City.

BART. For the year ending June 30, 1985, the average net operating deficit per passenger trip for BART was about $1.20./9/ On the basis of about 350,280 rides per year in the year 2000, the estimated annual BART deficit attributable to the project would be about $420,336, assuming that the cost per ride deficit is the same./10/ The project would generate a total of about $49,000 in revenues to BART, including about $33,000 in property tax revenues, and about $16,000 from the 75% of the 0.5% transit sales tax allocated to BART. This amount does not include the remaining 25% of the 0.5% BART sales tax revenue distributed by MTC among BART, MUNI and AC Transit. After subtraction of BART's revenues from sales and property taxes that would be generated by the project, the net operating deficit of BART due to the project would be about $371,336. BART's operating deficit per passenger is likely to decline in real terms as planned service improvements become operational in the future.

Traffic

Local Intersection Traffic

As described in Chapter IV, Environmental Setting, p.45, the Loma Prieta earthquake damaged a number of freeway segments in San Francisco. As a result a number of ramps serving those freeway segments have been closed. Among them are the Mission / Main Street and Mission / Beale Street ramps, located in the project vicinity. Thus, traffic patterns around the project site have been altered due to the ramp closures.

The analysis presented below addresses traffic conditions that include project impacts with the ramps remaining closed, and with the ramps re-opened or otherwise providing pre-earthquake carrying capacities. Although current planning related to The Embarcadero Freeway demolition and roadway anticipate continued use of the Main Street and Beale Street ramps, the scenario analyzing the closed ramps in included because it is unknown at this time when they will be re-opened.

Traffic data for the four study intersections were not available for pre-quake conditions, when the ramps were open, except at the Mission / Beale Streets intersection. Traffic data collected for

this EIR in March 1990, at the study intersections, reflect traffic volumes and patterns without the ramps. Because of the uncertainty of when the ramps will reopen, the analysis presents an assessment of current and future service levels at local intersections under both street network conditions (see Table 5). Level of Service (LOS) descriptions are shown in Tables D-2 and D-3, Appendix D, pp. A.45-46. The two p.m. peak-hour traffic counts (1982 and 1990) at Mission and Beale Streets and a 24-hour count on westbound Howard Street east of Spear Street in August 1989 were used to reconstruct the equivalent March 1990 turning movement volumes at the study intersections to derive conditions reflective of the pre-quake street network./11/

Pre-Quake Street Network (Ramps Open). Comparison of the traffic data (1982 and 1990) at Mission and Beale Streets indicates that about 70% of the southbound through traffic on Beale Street would use the Route 480 on-ramp to I-80 (Bay Bridge) or U.S. 101 (Peninsula destinations). This would reduce southbound right-turn and through traffic on Beale Street at Howard Street. Westbound traffic on Howard Street at Beale Street would also be reduced if the pre-quake street network were in place, based on the August 1989 count by the Department of Public Works./11/ Analysis of service levels at the Beale / Howard and Fremont / Howard Street intersections indicates these intersections operated (and would continue to operate with the project) at LOS A during the p.m. peak-hour under pre-quake street network conditions.

Comparison of 1982 and 1990 traffic counts at the Mission / Beale Street intersection indicates that it operated at LOS E during the p.m. peak-hour under pre-quake street network conditions. Project traffic would degrade the service level at Mission / Beale by one-half level to LOS E/F. The Mission / Fremont Street intersection operated (and with the project would operate) at LOS B. When also considering the effects of non-project traffic, the cumulative effects would result in degradation of service by one-half level at three of the four intersections by year 2000; the Mission / Beale Street intersection would operate at LOS F (jammed conditions), as shown in Table 5.

Project impacts at the intersection closest to the project site (Beale and Howard Streets) would primarily result from service-vehicle and pedestrian traffic, and from traffic using the proposed 130 on-site parking spaces. However, peak-hour traffic to the project site itself would be expected to decrease in the future, because of the decrease in the number of total parking spaces on-site and the decrease in the number of long-term parking spaces. Therefore, peak-hour traffic from the project site at local intersections would be less than at present. The existing on-site 180-space parking lot generates primarily peak-hour traffic because it provides mostly long-term commuter parking. Designation of the proposed 130 spaces in the project would be required, per

TABLE 5: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS)/a/

Intersection	Existing(1990) V/C	LOS	Existing+ Project V/C	LOS	Cumulative (including Project), Year 2000 V/C	LOS
With Mission Street Ramps Closed/b/						
Beale and Howard Streets	/c/	E/F/c/	/c/	E/F/c/	/c/	F /c/
Fremont and Howard Streets	/c/	E/F/c/	/c/	E/F/c/	/c/	F /c/
Fremont and Mission Streets	0.46	A	0.46	A	0.52/d/	A
Beale and Mission Streets	0.60	A/B	0.60	A/B	0.68/d/	B
With Mission Street Ramps Open/e/						
Beale and Howard Streets	0.40	A	0.40	A	0.45/d/	A
Fremont and Howard Streets	0.54	A	0.54	A	0.61/d/	A/B
Fremont and Mission Streets	0.62	B	0.65	B	0.70/d/	B/C
Beale and Mission Streets	0.96/f/	E	1.00	E/F	1.03/f/	F

/a/ LOS descriptions and relationship to V/C ratios are shown in Table D-3, p. A.46 of Appendix D.

/b/ Based on traffic counts conducted by Environmental Science Associates on Tuesday, March 20, 1990.

/c/ Intersection flow is obstructed by congestion and backups on Howard Street from the First and Harrison Streets intersection with the Bay Bridge on-ramp. The LOS is due to congestion of the downstream street network, not the V/C ratio at the Beale Street and Howard Street or Fremont Street and Howard Street intersections.

/d/ The projected 13% increase in V/C ratio (1990-2000) is consistent with the expected 20% increase in traffic volumes (1985-2000) in this area south of Market Street as projected by the Department of City Planning, based on cumulative traffic analysis conducted in the Mission Bay and South of Market EIRs.

/e/ Based on comparison of traffic data collected in 1990 with a 1982 traffic count at Mission and Beale Streets and an August 1989 traffic count on Howard Street east of Spear Street westbound.

/f/ As analyzed in the South of Market Plan EIR.

SOURCE: Environmental Science Associates, Inc.

Planning Code Section 155, to provide a minimum of 36 short-term spaces and 20 ridesharing spaces. The remaining 74 spaces could be used for short-term or long-term parking (the rate structure would be such as to discourage long-term parking). The project's parking supply would likely generate more trips per day through local intersections than the 180 long-term spaces. However, a lower number of trips would be likely to occur during the peak hour, and thus there would be less impact through the intersections than there is currently during the period with the highest traffic congestion. Persons coming to the project and desiring long-term parking would be expected to park elsewhere (probably in lots to the south) rather than drive to the site and pay a higher rate, and these trips would be dispersed among intersections throughout a larger area.

Current Street Network (Ramps Closed). The Beale / Howard and Fremont / Howard Street intersections currently operate at LOS E/F during the p.m. peak-hour, as a result of congested traffic backing up on westbound Howard Street from First Street and the on-ramp to the Bay Bridge at First and Harrison Streets. Southbound vehicles on Beale Street are not constrained by queuing, and the LOS is A. The designation of the intersections' LOS as E/F reflects delays experienced by drivers on Howard Street and turning right from Beale Street to Howard Street, not the V/C ratio. Operations at LOS F represent jammed conditions.

Traffic operations at the Mission / Beale Street and Mission / Fremont Street intersections serving the freeway on-ramp nearest the project site currently operate at LOS A/B and A, respectively. With the Mission Street ramps closed, the level of traffic on Mission Street is greatly reduced, as drivers use alternate streets to reach the freeways. The intersection Levels of Service are shown in Table 5. The addition of project traffic would not change the service levels. However, when also taking into account other non-project traffic at these intersections, cumulative traffic would degrade levels of service by one-half grade at three of the intersections by 2000; at that point the Beale / Howard Street and Fremont / Howard Street intersections would operate at LOS F.

Freeway Corridor Analysis

As discussed on pp. 96 to 99, the project would contribute to increases in traffic on the major freeways serving downtown San Francisco. Traffic generated by the project itself would increase total traffic on major freeways during the p.m. peak period and the p.m. peak hour by about 0.2% or less. Such increases would not be measurable against the day-to-day fluctuations in traffic

volumes. Because the Bay Bridge p.m. peak-hour eastbound traffic flow is functionally at capacity, the travel demand from the project would not be expected to increase the flows on the Bay Bridge in the peak-hour; rather, the East Bay-bound auto traffic from the project would most likely compete with and delay existing users of the Bay Bridge into later portions of the peak period. This competition for access would occur at the on-ramps to the Bay Bridge and any delay to existing users to later time periods would depend on the time of arrival of project vehicles at the on-ramps. Some drivers would shift to carpools or transit as a result of cumulative displacement.

Pedestrian Movements

The primary entrance to the building would be on Howard Street with secondary access on Beale Street. These would provide access to open space areas (outdoor plaza) and the lobby, where elevators serving upper office floors would be located. Entrances to ground-floor retail space would also be located off the open space areas.

Table 6 summarizes pedestrian flow conditions on sidewalks and crosswalks adjacent to the site and at the intersection of Beale and Howard Streets, and on sidewalks and crosswalks on and across Fremont Street between Howard and Mission Streets Operating conditions on sidewalks and crosswalks have been evaluated in terms of pedestrian flow categories or regimen, which relate the density of pedestrians in a specific time period (pedestrians per foot of clear sidewalk width per minute) to the quality of pedestrian flow (the difficulty of maintaining walking paths and speeds on a sidewalk). See Appendix D, Table D-4, p. A.47, for an explanation of pedestrian flow rates and LOS. Figure D-2, pp. A.48-49, shows photographs of sidewalk conditions for each flow regime. These sidewalks and crosswalks currently operate in unimpeded condition during both the noon-peak 15-minute period and the 15-minute p.m. peak period (in the project vicinity, p.m. peak period pedestrian volumes are generally heavier than in the noon peak)./12/

The project at full occupancy would generate about 380 new pedestrian trips on sidewalks and crosswalks in the vicinity of the site during the 15-minute peak-period of the noon hour, and about 266 new pedestrian trips during the p.m. 15-minute period. Conditions on these sidewalks and crosswalks following addition of the project pedestrian travel to existing volumes would be the same as at present except for the Howard Street and Beale Street sidewalks during the noon 15-minute peak and the Beale Street sidewalk and Howard Street crosswalk during the p.m. 15-minute peak. Conditions in each of those cases would worsen from unimpeded to impeded.

TABLE 6: PEAK PEDESTRIAN VOLUMES AND FLOW REGIMEN (project side of street)

	Total Width (feet)	Effective Width (feet)/a/	Existing p/f/m/b/	Existing Flow Regimen/c/	Existing Plus Project p/f/m	Existing Plus Project Flow Regimen	2000 p/f/m	2000 Flow Regimen	2000 Project Percent/e/
NOON PEAK /d/									
Howard St. sidewalk	11.5	8.5	0.8	Unimpeded	2.5	Impeded	2.8	Impeded	63%
Beale St. sidewalk	8.0	6.25	0.7	Unimpeded	2.4	Impeded	2.6	Impeded	63%
Crosswalk across Howard St.	8.0	8.0	0.5	Unimpeded	1.8	Unimpeded	2.0	Unimpeded	67%
Crosswalk across Beale St.	11.5	11.5	0.5	Unimpeded	1.8	Unimpeded	1.9	Unimpeded	67%
P.M. PEAK/d/									
Howard St. sidewalk	11.5	8.5	0.7	Unimpeded	1.5	Unimpeded	1.7	Unimpeded	47%
Beale St. sidewalk	8.0	6.25	1.4	Unimpeded	3.2	Impeded	3.7	Impeded	47%
Crosswalk across Howard St.	8.0	8.0	1.2	Unimpeded	2.5	Impeded	3.0	Impeded	44%
Crosswalk across Beale St.	11.5	11.5	0.6	Unimpeded	1.2	Unimpeded	1.4	Unimpeded	44%
P.M. PEAK (Fremont St. between Howard and Mission Sts.)/d/									
Fremont St. east sidewalk	20.0	6.5	1.9	Unimpeded	2.0	Unimpeded	2.7	Impeded	5%
Fremont St. west sidewalk	20.0	17.5	0.5	Unimpeded	0.6	Unimpeded	0.8	Unimpeded	10%
Crosswalk across Fremont at Howard St.	10.0	10.0	0.6	Unimpeded	0.7	Unimpeded	0.9	Unimpeded	15%
at Midblock	10.0	10.0	0.7	Unimpeded	0.7	Unimpeded	1.0	Unimpeded	8%
at Mission St.	13.0	13.0	1.4	Unimpeded	1.4	Unimpeded	1.9	Unimpeded	1%

/a/ The effective width is the narrowest portion of the sidewalk and is calculated by subtracting the space taken by poles, planter boxes, people standing at windows, etc., from the total width.
/b/ Pedestrians per foot of effective sidewalk width per minute.
/c/ See Table D-2 and Figure D-2, Appendix D, pp. A.40-51, for descriptions of pedestrian flow regimens.
/d/ Peak 15-minute periods.
/e/ Percentage of project-generated pedestrian trips of total pedestrian volumes in 2000.

SOURCE: Environmental Science Associates, Inc., and Pushkarev and Zupan, Urban Space for Pedestrians.

In the year 2000, during the noon 15-minute peak, the Howard Street and Beale Street sidewalks would worsen from unimpeded to impeded conditions, and the Howard Street and Beale Street crosswalks would remain in unimpeded conditions, compared to existing conditions (see Table 6). The project pedestrian traffic would represent about 63% of the pedestrian volumes on the sidewalks and about 67% of the pedestrian volumes on the crosswalks during the noon hour.

P.M. 15-minute peak operations in the year 2000 would continue to be in the unimpeded range on sidewalks and crosswalks in the project vicinity, except the Beale Street sidewalk, Howard Street crosswalk, and Fremont Street east sidewalk, which would worsen from unimpeded to impeded, compared to existing conditions. Project pedestrian traffic during the p.m. peak 15-minute period would represent about 47% of the pedestrian volumes on the sidewalks adjacent to the site, about 44% of the pedestrian volumes on the nearest crosswalks, and up to about 15% of the pedestrian volumes on the sidewalks and crosswalks on and across Fremont Street between Howard and Mission Streets There would continue to be adequate sidewalk and crosswalk widths for pedestrians (see discussion above and Table D-4, Appendix D, p. A.47).

The project would have 16-ft. and 10-ft. curb-cuts for the two off-street loading docks and a separate 26-ft. curb-cut for the ramp leading to the project garage located on Beale Street. This would increase the potential for vehicle / pedestrian conflicts along the Beale Street sidewalk.

OFF-STREET PARKING AND LOADING REQUIREMENTS AND DEMAND

Parking

Parking demand was projected for the 300 Howard Street project on the basis of the estimated vehicle traffic generated by the project. The proposed project would create net new long-term parking demand for about 191 long-term spaces (including 20 carpool/vanpool spaces) and short-term parking demand for 36 equivalent daily spaces, for a total parking demand of 227 daily spaces. Discounting for parking demand generated by existing uses on the site, the net additional parking demand generated by the proposed project would be about 219 spaces. The proposed project would provide about 27,870 gross square feet of parking area, which the Department of City Planning estimates could accommodate about 130 vehicles with tandem valet operations./13/ Parking demand calculations are presented in Appendix D, Table D-5, p. A.50.

Existing parking facilities on the site currently include a total of about 180 parking spaces./14/ None of the existing parking spaces are private, i.e., reserved for the exclusive use by employees

currently working in existing uses on the site. Of the 180 parking spaces made available to the general public, 105 monthly leases are currently valid and about 58% of the public parking is therefore considered long-term. About 42% of the public parking (75 spaces) is made available for short-term use, although most of these spaces are, in fact, used for long-term parking.

The proposed project would eliminate 180 existing parking spaces available to the general public, resulting in a total unmet demand of about 277 equivalent daily spaces [total project demand (227) plus displaced public parking (180) minus proposed parking capacity 130 equals 277 spaces total unmet demand]. Occupancy in off-street public parking lots and garages within a 1/4-mile radius of the project's site may be expected to increase from the existing 82% to 90% as a result of the unmet parking demand generated by the project, assuming no change in travel modal splits.

The proposed project is in the C-3-O District, in which off-street parking is not required for commercial uses. The City Planning Code allows accessory parking up to seven percent of the gross floor area of the project. The 27,870 gross square feet of parking proposed by the project sponsor would be within this seven percent allowed (398,520 total gross floor area in the project x 0.07 = 27,900 gsf allowable for accessory parking). The proposed project would allocate at least 36 spaces for public short-term parking, and at least 20 spaces for carpools and vanpools. Parking provided in the proposed project for public use would be subject to a rate structure (City Planning Code Section 155(g)), which encourages short-term use and discourages all day parking.

Loading

Based upon data published in *Center City Circulation Program: Pedestrian Circulation and Goods Movement*, the new building would generate about 90 service vehicle stops per day./15/ Average hourly loading space needs are given in terms of spaces per hour per 10,000 gsf of building space; average demand for the project would be about 4.4 spaces per hour and peak hourly demand would be 5.5 spaces.

Under the City Planning Code, the project would be required to provide four loading docks to serve the 394,780 sq. ft. of office space (0.1 spaces per 10,000 sq. ft. of gross floor area = 3.9 or four spaces). The Code allows the substitution of two service van spaces for each loading space, provided that at least one-half the required number of spaces are provided for trucks. Two full-size truck loading spaces with curb cuts of about 16 and ten ft. would be located on the

ground floor with access from Beale Street. A ramp with a separate curb cut of about 26 ft. would provide access to the project garage where four service van loading spaces would be located. The project would satisfy the City Planning Code requirement for provision of loading docks, but would not meet the average demand for 4.4 loading spaces per hour and peak hourly demand for 5.5 loading spaces per hour, unless deliveries/service calls by van/UPS-type vehicles predominant. If loading demand by full-size trucks were to exceed two spaces, on street double parking would occur on Beale or Howard Street. This could affect MUNI operations on these streets. Use of the loading spaces in the project garage by van/UPS-type vehicles would require adequate vertical clearance and signs or personnel to clearly indicate the availability of basement loading spaces; otherwise, double parking by these vehicles would also occur.

Analysis of the design of the proposed Beale Street loading/service area indicates that standard single-unit trucks would be able to enter the loading area by backing in from a southbound position on Beale Street, as required by Department of Public Works standards.

DEMOLITION, EXCAVATION, AND CONSTRUCTION TRAFFIC/16/

During the projected 18- to 20-month construction period, transportation impacts would result from truck movements to and from the site during demolition, excavation, and construction activity. Demolition and excavation would require about six weeks and would generate an average of 40 truck movements per day in or out of the project site, between 9:00 a.m. and 3:30 p.m. Trucks would use the Fourth Street on-ramp to reach the freeway to haul debris and excavation materials to a disposal site in South San Francisco. Construction activities (steel erection and finishing) would generate an average of five truck movements per day during the remaining 18-month period. Deliveries of materials would occur between 9:00 a.m. and 3:30 p.m.

Primary construction truck access to the site is proposed to be from Howard Street with secondary access from Beale Street. During the construction period, the sidewalks fronting the project site on Howard and Beale Streets would be closed, and the curb lanes on Howard and Beale Streets would need to be closed to provide pedestrian walkways. Closure of the curb lane on Howard Street would displace ten metered parking spaces; closure of the curb lane on Beale Street would result in the displacement of six metered parking spaces and a MUNI bus stop used by the 80X-Gateway Express and 81X-CalTrain Express lines. Lane and sidewalk closures are subject to review and approval by the Department of Public Works.

Materials storage is proposed to be on-site, and would therefore not require construction vehicle trips to and from the site on a frequent basis to deliver materials. Temporary parking demand from construction workers' vehicles, and impacts on local intersections from construction worker traffic, would occur in proportion to the number of construction workers who would use automobiles.

The impact of construction-related traffic would be a lessening of the capacities of access streets and haul routes because of the closure of curb lanes to provide temporary pedestrian walkways, and the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Lane blockage on Howard and Beale Streets by queued trucks, if it were to occur, would reduce the capacity of these streets. The following MUNI lines could be affected: 41-Union, 80X-Gateway Express, 81X-CalTrain Express and 30X-Marina Express; the express buses would only be affected by construction activities during 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. periods. Blockage during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater numbers of vehicles on the streets during the peak hour that would have to maneuver around the queued trucks. Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would coincide with peak-hour traffic, and would serve to worsen service levels. As noted above, truck traffic would be restricted to the hours of 9:00 a.m. to 3:30 p.m. which would avoid such peak-period effects.

Additional developments in the immediate project vicinity are in different stages of environmental review, project approval or construction: One Second Street is currently being reviewed, 101 Second Street and 299 Second Street are approved but not under construction, and 524 Howard Street and 222 Second Street are currently under construction. Some phases of other developments' construction could overlap with construction of the project. The 524 Howard and 222 Second Street developments are closest to the project site. In the event of combined construction periods of the proposed project and one or more of these other projects, construction truck traffic would be expected to increase further, and traffic congestion and transit delays could worsen beyond the conditions described above. Should one project be completed and a second begin soon after, construction truck traffic impacts would be prolonged, but not likely be further degraded.

During the construction period, closure of the sidewalks fronting the project site on Howard and Beale Streets and provision of pedestrian walkways in the adjacent curb lanes could disrupt existing pedestrian flows. To maintain pedestrian flows in the unimpeded range, walkways with effective widths of no less than 3.2 feet and 4.5 feet would need to be provided on Howard Street and Beale Street, respectively.

NOTES - Transportation

/1/ This general information is based on impact analysis carried out in the *I-280 Transfer Concept EIR*, 84.385E, May 23, 1985, which examined different surface route alternatives along The Embarcadero right-of-way. Any new roadway designs proposed for The Embarcadero would be subject to additional, separate environmental review.

/2/ San Francisco Department of City Planning, *Transportation Guidelines for Environmental Impact Review: Transportation Impacts*, September 1983. This document describes the procedure used to calculate travel demand from the project. Trip generation rates of 18.1 person trip-ends (pte) per 1,000 gross sq. ft. of office space and 150 pte per 1,000 gross sq. ft. of retail space were used to generate travel from the project. The two trip generation rates are for independent land uses. When used to generate travel from more than one land use on the same site the rates may overestimate total travel to the site since a portion of the travel from each of the land uses may occur between land uses on the site and not leave the site. Such trips are referred to as "linked trips." The calculations for this project have not been discounted to account for linked trips and thus present a "worst-case" scenario.

/3/ Deduction of existing travel demand is per the *Transportation Guidelines*.

/4/ The percentage of travel occurring in the peak period and the peak hour are from the *Transportation Guidelines* has been adjusted to show only outbound (leaving the downtown area in the peak commute direction) travel. The outbound travel consists of all of the work-related travel and one-half of the other (non-work) travel.

/5/ San Francisco Department of City Planning, Office of Environmental Review, *The Mission Bay Environmental Impact Report* (86.505E), Vol. II, pp. VI.E.71-78. This document is an analysis of projected growth in the Downtown & Vicinity to the year 2000 and 2020. The transportation analysis in the EIR includes projections of future modal splits for work and other (non-work) travel for the p.m. peak period and peak hour time periods.

/6/ This deficit-per-ride figure is based upon information provided by a recent MUNI cost analysis constructed by PUC staff and consultants showing that the appropriate figure for fiscal year 84-85 was approximately $0.28 per additional MUNI trip taken at peak service hours. Using the updated figure the annual cost deficit to MUNI would be $43,042. Leonard Tom, Administrator, Transit Impact Development Fee, San Francisco Public Utilities Commission, letter, January 7, 1989.

/7/ According to MUNI, the appropriate technique for determining the costs to MUNI of cumulative development is an average cost analysis which would include both capital and operating costs. Application of this technique, however, is limited because relevant capital cost data are not available from MUNI. Further, capital costs are difficult to allocate on a person-trip basis, as capital expenditures occur from time to time in large amounts, not necessarily annually. The established method of allocating capital costs is through depreciation, which is based on historical depreciation costs, not replacement costs. Such an estimate would be low in comparison with the costs of new capital improvements required for a single passenger trip. The use of existing capital cost data would underestimate future capital cost needs. Existing MUNI accounting statistics do not enable future capital costs to be calculated on a per passenger trip basis (Bruce Bernhard, MUNI Chief Financial Analyst, telephone communication, March 25, 1985).

/8/ This conclusion should be qualified because the MUNI deficit-per-passenger-trip figure is based on 1984-85 data, and because the total project-generated deficit is calculated only for those riders who use MUNI as their primary mode of transportation, excluding riders who would use a combination of transportation carriers, such as MUNI and CalTrain. More recent data that would allow a more precise estimate of costs are not available. The deficit due to the project would be: 610 peak-period trips per day x 252 working days per year x $0.28 deficit = $43,042. The cost deficit estimate is based on the assumption that essentially all vehicles are operating at capacity during peak periods and additional riders would require new vehicle trips. It was assumed that during off-peak periods, all vehicles operate with excess capacity, resulting in an average off-peak marginal cost of zero. These cost estimates are appropriate for project costs to MUNI of a single office building. Assessments of costs that would result from cumulative development require the inclusion of additional cost factors and may be best projected using average cost data. MUNI does not have data that would enable it to estimate the average cost per passenger trip. It is reasonable to conclude that average costs would be significantly higher than marginal costs.

/9/ Ward Belding, Supervisor, Office of Research, BART, telephone conversation, September 27, 1985. The $1.20 average deficit per trip is based on all operating costs and revenues for the entire system and is not specific to San Francisco trips. Available data from BART do not enable peak and non-peak periods costs to be differentiated.

/10/ 1,390 BART trips per day x 252 days/year x $1.20 = $420,336.

/11/ Manual turning movement traffic counts at Mission Street and Beale Street by Environmental Science Associates, June 23, 1982 and March 20, 1990. Machine traffic count on Howard Street, east of Spear Street, westbound, by San Francisco Department of Public Works, Traffic Engineering Bureau, August 22, 1989.

/12/ Pedestrian counts were made by Environmental Science Associates, Inc. on Tuesday and Thursday, May 29 and 31, 1990 from 4:30 p.m. to 5:30 p.m., and on Wednesday, May 30, 1990 from Noon to 1:00 p.m.

/13/ Using the Department of City Planning's standard of about 215 gross square feet per vehicle for tandem valet parking in downtown San Francisco, per May 4, 1989 memorandum. Dean L. Macris to City Planning Commission.

/14/ This reflects the actual vehicular capacity of the existing lots at any time, as currently operated as self-park, and not the total number of vehicles or individuals who may use the facility. For long-term parking, it is recognized that leasing operations often "oversubscribe" parking facilities, selling more leases than the number of vehicles the facility can accommodate at one time, to take care of non-daily users who still wish a long-term lease, and those who are in-and-out during the course of the day. As a result a greater number of parking leases or users may be displaced than the actual vehicular capacity of the facility.

/15/ San Francisco Department of City Planning, 1980, *Center City Pedestrian Circulation and Goods Movement*, Working Papers 1, 2 and 3, and Final Report.

/16/ This section was prepared on the basis of estimates of construction periods, truck movements and access routes provided by William A. Bodrug, Senior Associate and Development Manager, Bechtel Investments Realty, letter, June 19, 1990.

G. AIR QUALITY

CUMULATIVE CONTEXT

The Mission Bay and South of Market Plan EIRs analyzed cumulative effects of development in the Downtown & Vicinity on regional air quality in the future. This material is incorporated by reference and summarized here. The analyses in those EIRs describe the continued failure of the Bay Area to attain federal ozone and carbon monoxide standards, a problem to which the project would contribute. (For more detail on air pollutant emissions and their impacts, see Mission Bay EIR, Vol. II, pp. VI.F.13-18.)

Motor vehicle exhaust emissions would continue to be the primary source of air pollutants in the Downtown & Vicinity. These emissions would affect local and regional air quality. Ozone and carbon monoxide concentrations occasionally violate air quality standards at some locations in the Bay Area. Emissions of hydrocarbons and nitrogen dioxide, precursors of ozone, would contribute to regional ozone concentrations. Emissions would also add to carbon monoxide concentrations at congested intersections.

Computer modeling of cumulative carbon monoxide concentrations at eight congested intersections analyzed in the Mission Bay EIR (five of which are intersections adjacent to freeway ramps) suggests that prior to the Loma Prieta earthquake, state and federal standards for eight-hour average concentrations (9 parts per million [ppm]) were violated on occasion at the intersection of Sixth and Brannan Streets (13.4 ppm) and at the intersection of Third and Berry Streets (9.2 ppm). With the temporary closure of I-280 for repairs, these two intersections are not currently congested; both the normal traffic and the resulting air quality effects have been dispersed to other intersections. When I-280 is re-opened, traffic at the study intersections is expected to return to pre-quake levels, resulting in air quality similar to pre-quake conditions. None of the eight intersections violate state or federal one-hour standards (20 ppm and 35 ppm, respectively). Carbon monoxide concentrations are expected to improve throughout the region due primarily to better vehicle emission controls. Carbon monoxide concentrations at the eight intersections, even with Mission Bay and cumulative growth in traffic, are projected to decrease. No violations of state or federal carbon monoxide standards are expected at those intersections in 2000 (or at buildout of Mission Bay in 2020). (For more detail on intersection carbon monoxide concentrations in the South of Market area, see Mission Bay EIR, Volume II, pp. VI.F.9-10 and 17-18, and Table VI.F.4, p. VI.F.19; South of Market EIR pp. 140-142 and Table 10, p. 143.)

The *1982 Bay Area Air Quality Plan (1982 Plan)* established schedules and strategies to comply with federal ozone and carbon monoxide standards established under the Clean Air Act by

December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and carbon monoxide (standards are occasionally violated). The U.S. Environmental Protection Agency (EPA) has required that the *1982 Plan* be updated by 1991.

Effective January 1, 1989, the California Clean Air Act provides for the designation of districts into three classes: moderate (defined as an area which can attain state and federal air quality standards by December 31, 1994), serious (areas which can attain the standards by December 31, 1997), and severe (areas that cannot specify an attainment date). In each case, the Act specifies strategies that must be adopted. In all cases, plans are required to demonstrate a five percent per year reduction in the emissions of pollutants or precursors, unless the California Air Resources Board (ARB) determines that all feasible measures are being employed. BAAQMD is in the process of determining the Bay Area's status./1/

PROJECT EFFECTS

Upon completion, the project would affect localized air quality in two ways. Emissions would be generated by project-related traffic, and by combustion of natural gas for building space and water heating. Transportation sources would account for over 90% of project-related emissions.

Since the future of the Embarcadero Freeway is uncertain, curbside CO concentrations at selected local intersections that would be affected by project-generated traffic and by cumulative development traffic were projected for conservative conditions for two different scenarios: one in which the Beale Street on-ramp would reopen, assuming The Embarcadero Freeway is repaired or replaced by a surface roadway in The Embarcadero right-of-way, and one in which it would remain closed. Curbside CO concentrations for both of these scenarios are compared with ambient standards in Table 7.

Currently (1990), assuming the Beale Street on-ramp were to reopen, the eight-hour CO concentrations at the Howard / Fremont and Mission / Beale Street intersections are estimated to violate air quality standards. In addition, the eight hour CO concentration at the Howard / Fremont Street intersection is estimated to violate air quality standards with the Beale Street ramp closed. In 2000, the average vehicle is expected to emit less carbon monoxide (CO) than in 1985 (or 1990) due to ongoing state and federal emissions controls. Thus the project is not projected to violate the standards at these intersections in this future scenario. However, if the Beale Street Ramps were to remain closed, there would continue to be a potential for violations of CO standards to occur at the Howard / Fremont Street intersection (although of a smaller magnitude than what is estimated to currently occur).

TABLE 7: EXISTING AND PROJECTED CURBSIDE CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS/a/

Intersection	Averaging Time	Concentrations (ppm) 1990	2000/b/
Mission and Fremont	1-hour	12.7 (11.9)/c/	12.1 (11.3)
	8-hour	8.9 (8.3)	8.5 (7.9)
Howard and Fremont	1-hour	13.1 (13.4)	11.8 (13.0)
	8-hour	9.1 (9.4)	8.2 (9.1)
Mission and Beale	1-hour	13.1 (11.7)	12.6 (11.0)
	8-hour	9.1 (8.2)	8.8 (7.7)
Howard and Beale	1-hour	10.5 (11.9)	9.6 (11.3)
	8-hour	7.3 (8.3)	6.7 (7.9)

/a/ Calculations for all scenarios were made using a revised version of the Modified Linear Rollback (MLR) method described in the Downtown Plan EIR. Background concentrations were calculated to be 5.8 ppm for eight hours in 1990, and 5.0 ppm for eight hours in 2000. Any underlined values would be in violation of the state or federal CO standards. The one-hour State standard is 20 ppm, the one-hour federal standard is 35 ppm, and the eight-hour State and federal standards are 9 ppm. Emission rates were derived from the California Air Resources Board EMFAC7D computer model, from the BAAQMD's Guidelines, revised April 1988.

/b/ Based on the growth forecasts contained in the Mission Bay EIR. The project is contained within this forecast.

/c/ Figures without parentheses are calculated with the assumption that the Beale Street on-ramp would be open. Figures in parentheses are based on traffic figures assuming the Beale Street on-ramp would be closed.

SOURCE: Environmental Science Associates, Inc.

Table 8 shows projected daily emissions of pollutants in the year 2000 from project-generated traffic, and compares them with San Francisco County transportation-related emissions and total transportation-related emissions in the Bay Area. The project would contribute less than 0.1% to the transportation-related emissions inventory for San Francisco in 2000, which is below the one percent threshold established by the BAAQMD defining a potentially significant impact on air quality.

Emissions of particulates resulting from construction and from vehicle trips generated by the project and cumulative development would increase particulate concentrations, which could increase the frequency of particulate standard violations in San Francisco, with concomitant health effects and reduced visibility./2/

TABLE 8: PROJECTED DAILY TRANSPORTATION-RELATED POLLUTANT EMISSIONS

	(tons per day)/a/		
Pollutant	Project 2000/a,b/	SF County 2000/c/	Bay Area 2000/c/
Hydrocarbons	0.01	14	160
Nitrogen Oxides	0.02	22	270
Carbon Monoxide	0.21	120	1,400
PM_{10}	0.03	28	310
Sulfur Oxides/d/	0.00	28	83

/a/ Project emissions were calculated using BAAQMD EMFAC7D vehicle emission factors. Emissions of HC, NOx, and CO include an assumed six minutes of idling time per vehicle trip. Emissions of particulates include dust disturbed from roadway surfaces.
/b/ Based upon a weighted daily average of 12,074 vehicle-miles traveled.
/c/ San Francisco County and Bay Area emissions correspond only to transportation-related emissions based on BAAQMD Emissions Inventory Summary Report (August 1987), and year 2000 emissions inventory for the Bay Area provided by Tirlochan Mangat, Manager, Special Projects Section, BAAQMD.
/d/ Sulfur oxides and sulfur dioxides are assumed to be interchangeable.

SOURCE: Environmental Science Associates, Inc.

NOTES - Air Quality

/1/ Patrick Navis, California Air Resources Board Liaison to the Bay Area Air Quality Management District, California Air Resources Board, telephone conversation, January 8, 1991.

/2/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter which has been demonstrated to have health implications when inhaled (PM_{10}). Only those particulates 10 microns or less in size are measured under the PM_{10} standard. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50-60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM_{10} standards. BAAQMD is presently monitoring PM_{10} at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco.

H. CONSTRUCTION NOISE

Ambient noise in the project vicinity is typical of noise levels in downtown San Francisco, which are dominated by vehicular traffic, including trucks, cars, MUNI buses and emergency vehicles.

A sidewalk noise measurement taken during the weekday p.m. peak commute time shows average noise levels of about 73 dBA at the corner of Howard and Beale Streets./1,2/ The Downtown Plan EIR indicates day-night weekday noise levels (L_{dn}) of about 75 dBA, L_{dn} along Howard Street and 71 dBA, L_{dn} along Second Street in the vicinity of the project./3,4/

Project construction would take place over about 20 months, and would increase noise levels in surrounding areas. Construction noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers between noise source and listener. To estimate probable noise impacts, this analysis assumes typical equipment and construction techniques. Table 9 shows typical exterior noise levels associated with the different phases of construction (see Appendix G, p. A.60, for a table of typical noise levels found in the everyday environment). Interior noise levels at 50 ft. from the noise source would be about 10 to 15 dBA less than those shown in Table 9. Closed windows would reduce noise levels by about 20 to 25 dBA below those shown in the table.

Construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the City Police Code). The ordinance requires that sound levels of construction equipment other than impact tools not exceed 80 dBA at a distance of 100 ft. from the source. Impact tools (jackhammers, piledrivers, impact wrenches) must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. Section 2908 of the Ordinance prohibits construction work at night, from 8:00 p.m. to 7:00 a.m., if noise would exceed the ambient noise level by five dBA at the project property line, unless a special permit is authorized by the Director of Public Works.

The project would require piledriving. Piledriving would occur intermittently over about four weeks; hammering would occur during a five- to eight-minute period for each pile. Conventional unmuffled and unshielded pile drivers emit noise levels of 100 to 110 dBA at a distance of 100 ft. each time the driver strikes the pile. The Department of Public Works allows piledriving operation under certain conditions, which may include specifying relatively quiet equipment, predrilling pile holes, and/or specifying hours of operation to reduce the number of people exposed to noise effects.

If piledriving were to occur during the daytime, employees and other occupants of the adjacent commercial and office uses would be affected. In offices immediately adjacent to the site on the west (at 177 and 181 Fremont Street), interior noise levels during piledriving could reach 86 dBA with windows open and 76 dBA with windows closed. Commercial uses across Howard Street in the 301 Howard and 215 Fremont Center buildings, approximately 100 ft. from the project's

TABLE 9: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS, 50 FEET FROM SOURCE

Construction Phase	Duration of Phase/a/ (weeks)	Average Noise Level (dBA)
Ground clearing	4	84
Excavation	12	89
Foundations/b/	12	78
Erection	16	85
Exterior Finishing	8	89

/a/ Hailey, Frank, Project Architect, The Architect's Collaborative, telephone conversation, March 13, 1990. Excavation and foundation phases of construction would overlap.
/b/ Time includes four weeks of piledriving; noise level is for activities other than piledriving. Exterior noise levels during piledriving could reach 101 dBA at 50 ft. from the source.

SOURCE: Bolt, Beranek and Newman, December 31, 1971, *Noise from Construction Equipment and Home Appliances*, Environmental Protection Agency

southern boundary, would experience noise levels of about 80 dBA with windows open and about 70 dBA with windows closed during piledriving. This noise level would result in occupants having to shout to communicate and would make telephone conversations difficult. These noise levels would require windows to be closed and normally would require noise barriers to be erected between the construction noise source and the receptor.

The noise level at several other highrises in the project vicinity would depend on their distance from the noise source. This distance, coupled with the attenuation of 15 to 20 dBA normally provided by the building envelope, would mitigate impacts on interior noise levels in nearby highrises. "Rockin' Robin's," a restaurant and bar about 300 feet from the project's northeastern corner at 133 Beale Street, provides service until 2:00 a.m. nightly. The restaurant has two stories, with the second story an open air bar covered with a canopy and partially enclosed by sliding glass windows. This second-floor building envelope provides minimal attenuation of outdoor noise. Noise levels from piledriving on the project site would be about 86 dBA outside the restaurant. Interior noise levels on both the first and second floors would probably not be affected, however, because the music currently played in the restaurant would be loud enough to mask noise generated by project construction. The project sponsor would require that the construction contractor limit piledriving activity to result in the least disturbance to neighboring uses, and would consult with the Public Works Department to determine the least disruptive time for piledriving. Pile holes would be predrilled, which would reduce the duration of pounding for each pile.

Vibrations from the impact during piledriving would be felt in adjacent and nearby buildings. These vibrations have been found to be more disturbing to some people than high noise levels. Noise at levels greater than 60 dBA can interfere with normal speech and concentration, noise levels greater than 70 dBA would require workers to close windows or shout to communicate. General stress reaction has been observed in humans exposed to brief sounds of 75 dBA./5/ At noise levels of 85 dBA, normal conversation is extremely difficult, and sleep or rest virtually impossible. Intermittent noises, such as piledriving noise, reduce perception of control over the environment. This perceived loss of control frequently results in a depressed mood and depressed motivation. It has also been shown that high noise levels can lead to elevated blood pressure./6/ Repeated impulse and intermittent sounds of high level appear more likely to disrupt performance than continuous or steady sounds of comparable level./7/

The U.S. Environmental Protection Agency (EPA) has determined that noise levels of 70 dBA, L_{eq} over a 24-hour day, assuming a 40-year exposure period, are the maximum level at which conservation of hearing is ensured for virtually all of the population./8,9/ Assuming that actual piledriving would occur for about 45 minutes per day, the maximum suggested non-occupational noise exposure level would be about 93 dBA, L_{eq}./10/ This noise level would be 17 dBA greater than the maximum noise levels expected during piledriving adjacent to the project site with windows closed.

Noise generated during piledriving could be reduced by erecting barriers around the project site. Barriers may include such items as berms, walls, etc., that would affect sound propagation by interrupting it and creating an "acoustic shadow zone." The more solid, high and wide a noise barrier were, the more effectively it would attenuate noise. A wall may provide maximum noise reductions up to 20 dBA, while a berm may reduce noise levels a maximum of 23 dBA./11/

Additional developments in the immediate project vicinity are in different stages of environmental review, project approval or construction: One Second Street is currently being reviewed, 101 Second Street and 299 Second Street are approved but not under construction, and 524 Howard Street and 222 Second Street are currently under construction. Should any of these projects' construction schedules coincide with that of the proposed project, noise levels would be expected to increase by two to five dBA. This increase would be audible (depending on the loudness of the activity) and would probably be annoying, since noise from construction of one project would be annoying to the nearest receptors (those within 100 ft.). Should one project be completed and a second begin soon after, noise impacts would be prolonged.

In summary, during the majority of construction activity, noise levels would be above existing levels in the area. There would be times, particularly during the operation of piledrivers

or impact wrenches, when noise would interfere with indoor activities in nearby offices and retail stores.

NOTES - Construction Noise

/1/ The noise measurement was taken by ESA on March 20, 1990 from 4:30 p.m. to 5:30 p.m. using a Metrosonics dB-306A Metrologger with calibration prior to the measurement. The measurement was taken at the Northwestern corner of Howard and Beale Streets approximately 15 feet from the side of the road.

/2/ A decibel (db) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. A dBA is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels.

/3/ Ldn, the day-night average noise level measurement, is based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise between 10:00 p.m. and 7:00 a.m. is weighted 10 dBA higher than daytime noise.

/4/ San Francisco Department of City Planning, *Downtown Plan Environmental Impact Report (EIR)*, EE81.3, certified October 18, 1984, Volume 1, pp. IV.J.1-19, particularly Table IV.J.2, pp. IV.J.9-10.

/5/ The Central Institute for the Deaf, *Effects of Noise on People*, U.S. EPA, 1971.

/6/ Sheldon Cohen, et al., "Cardiovascular and Behavioral Effects of Community Noise," American Scientist, Volume 69, October 1981.

/7/ National Institute for Occupational Safety and Health, *Occupational Exposure to Noise*, U.S. Department of Health, Education and Welfare, 1972.

/8/ U.S. Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

/9/ L_{eq} is the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period.

/10/ U.S. Environmental Protection Agency, *Noise Effects Handbook*, July 1981.

/11/ U.S. Department of Transportation, Federal Highway Administration, *Highway Noise*, December 1978.

I. GEOLOGY AND SEISMICITY

The project site is at about 0.1 ft., San Francisco City Datum (SFD)./1/ Surficial fill soils at the site are composed of loose to medium dense fine sand with silt, clay, fill and debris about 12 to 14 ft. thick. This, in turn, is underlain by three to eight ft. of medium dense dark gray fine sand and then about five to fourteen ft. of dark greenish gray soft silty clay known as "bay mud."

These deposits are underlain by sandy, dense to very dense soils labelled "bearing sands," 52 to 55 ft. thick. Groundwater levels are expected to be encountered at about 15.6 ft., SFD./2/

Excavation for the project foundation, elevator pits and basement parking would be conducted to a depth of about -32.6 ft. SFD (about 15 ft., six inches below the basement of the Marine Electric Company building). A driven pile foundation, supported in the bearing sands, would probably be required. See pp. 120 to 123 for a discussion of construction noise and vibration impacts.

Dewatering would be required during excavation. Dewatering could cause some settlement of adjacent buildings. Measures to mitigate this potential impact are under consideration by the project sponsor (see mitigation, p. 140).

Pit walls would be shored up to prevent lateral movement during excavation. Adjacent structures on Fremont Street might need to be underpinned, should excavation go below the base of its foundation, to avoid such damage as cracking of walls or foundations or sagging of floors. The building contractor must comply with the San Francisco Building Code and the Excavation Standards of the California Occupational Safety and Health Agency. Additionally, lowering of the local water table by project dewatering could result in rotting of wooden piles in the site vicinity. A measure to mitigate such an impact is under consideration (see p. 140). Another available measure to mitigate the effects of dewatering but which has not yet been incorporated into the project describes a preconstruction survey of adjacent buildings and streets to establish (and maintain) existing elevations.

The closest active faults to San Francisco are the San Andreas Fault, about nine miles southwest of Downtown; the Hayward Fault, about nine miles northeast of Downtown; the San Gregorio Fault, about 20 miles west of Downtown; and the Calaveras Fault, about 22 miles east of Downtown. The project area would experience Violent (Intensity Level B, fairly general collapse of brick and frame structures when not unusually strong, serious cracking of better buildings, lateral displacement of streets, bending of rails and ground fissuring) groundshaking during a major earthquake./3/ The building would be required to meet current seismic engineering standards of the San Francisco Building Code. (See mitigation measures for the project's emergency response plan, p. 141.) The project would rehabilitate the existing Marine Electric Building on the site, including the provision of seismic reinforcement, thus increasing the building's resistance to damage during an earthquake.

The Downtown Plan EIR includes information on Seismic Safety issues in the C-3 District of downtown. That information remains current. The South of Market Plan EIR provides similar

information for that area, as does the Mission Bay EIR for its project area. These EIRs do not provide any new data about seismic issues that establish a need for revisions in the Downtown Plan EIR information or conclusions.

In summary, the Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas and Hayward faults. Relatively more of the land in Downtown & Vicinity is subject to violent groundshaking intensity than the rest of the City because the eastern edge of the area, including nearly all of Mission Bay, is built on filled land. Employment growth such as that expected in the proposed new building, would result in larger numbers of persons being exposed in the future to earthquake hazards if a seismic event occurred during the work day. New buildings are subject to more stringent building and structural standards than are older buildings. Therefore, persons working (or residing) in buildings such as the proposed project would be relatively safer than those in some older existing buildings. However, during an earthquake, glass, and in some cases building cladding, is expected to endanger those on the streets and sidewalks. The bridges leading to/from San Francisco are expected to be closed for over three days due to damaged access ramps. The same would be true of the freeways heading south to the Peninsula. MUNI and Caltrain would be out of service for some time, and power outages would occur for at least one or two days. (See Downtown Plan EIR pp. IV.K.1-17a; Mission Bay EIR, Vol. II, pp. VI.K.11-15 and 33-43; South of Market EIR, pp. 154-174.)

A moderate earthquake with an estimated magnitude of 7.1 on the Richter Scale occurred in the Bay Area in October 1989. The earthquake lasted about 15 seconds and caused damage in the epicentral region in Santa Cruz, Watsonville, Hollister and Los Gatos. San Francisco and other areas, as far as 50 miles from the epicenter, were also damaged.

Casualties and damage were caused by falling objects, collapsed structures, fire and miscellaneous injuries (such as heart attacks). Most of the casualties and damage were a result of ground shaking which caused the Cypress structure of I-880 to collapse, as well as collapse of a section of the Bay Bridge which rendered it closed to traffic for one month. The Cypress structure has since been demolished. Other structural damage was incurred on the Embarcadero Freeway and portions of I-280 and U.S. 101 (a further description of the damage is provided on p. 45). In addition, several masonry structures (including brick chimneys) failed. Wood-frame buildings were jolted off their foundations in areas near the epicenter as well as in San Francisco and other Bay Area cities.

Ground failure also occurred, most notably in the Santa Cruz area near the epicenter. Landslides resulted in road closures and damage to structures. Liquefaction and ground settlement occurred

in places further from the epicenter (primarily, for example in the Marina District and the area south of Market Street in San Francisco, and the Oakland International Airport). Fires resulted from ruptured utility lines. The type of damage caused by the earthquake is typical of moderate sized earthquakes. Damage that occurred at distances up to 50 miles from the epicenter is evidence that the project area may be adversely affected by earthquakes occurring on any of the region's major faults.

Damage in the South of Market area was basically confined to buildings constructed prior to 1970. An earthquake of similar magnitude to (or larger than) the 1989 earthquake could occur again on the San Andreas, Hayward, or Calaveras faults. The Mission Bay EIR analyzes seismic impacts for an 8.4 magnitude earthquake on the Richter scale on the San Andreas Fault, a 6.9 magnitude on the Hayward Fault, a 7.3 magnitude on the Calaveras Fault, and a 7.1 magnitude on the San Gregorio Fault and describes damage conditions that generally are greater than what were experienced in October 1989. Other active faults in the region could produce smaller earthquakes.

NOTES - Geology and Seismicity

/1/ San Francisco City Datum establishes the City's zero point for surveying purposes at approximately 8.6 ft. above mean sea level.

/2/ Dames & Moore, *Draft Report: Preliminary Geotechnical Investigation, Proposed Howard Street Development for Bechtel Investment Realty, Inc., San Francisco, California*, March 16, 1990.

/3/ URS/John A. Blume and Associates, *San Francisco Seismic Safety Investigation*, 1974. Groundshaking intensities that would result from a major earthquake were projected and classified on a five-point scale ranging from E (Weak) through A (Very Violent).

J. HAZARDOUS MATERIALS

The neighborhood that includes the project site has a history of industrial use. Three potential sources of contamination at the project site have been identified: (1) possible residual soil or groundwater contamination from past activities on the site, especially gas works waste disposal, coal and coke storage, metal works, and gas and oil storage; (2) contamination potentially originating from similar activities off site, including contaminated groundwater migrating onto the site from other properties in the vicinity, and (3) possible contaminated fill.

Portions of the soil and groundwater at the project site have been affected by hazardous materials, and portions of the site are contaminated to a degree that criteria set forth in Title 22 of

the California Code of Regulations (22 CCR) would classify them as "extremely hazardous" wastes upon excavation. Sampling and testing in accordance with San Francisco's "Analyzing the Soil for Hazardous Wastes" ordinance has determined that benzidine, polynuclear aromatic hydrocarbons, and petroleum products are the contaminants of most concern./1,2/

Hazardous materials-related impacts of development at a paved urban site of the type seen at Beale and Howard Streets are typically related almost entirely to excavation and disposal of contaminated soils and groundwater. In general, earthmoving or dewatering in contaminated areas, if managed improperly, could directly expose workers, the public, or the environment to soils, soil gases, or groundwater contaminated with hazardous materials or wastes. Migration of gases and/or dust during construction activities could similarly affect the nearby public and the environment. Depending on a specific site being developed or even a specific location within a project site, the chemical contaminants that could be encountered would vary.

Activities that could lead to discovery and exposure of contaminated soils or groundwater include site investigation, site remediation, excavation, dewatering, and underground storage tank (UST) removal if a presently unknown tank were later found to exist. Each of these activities could involve exposure of workers, the public and/or the environment to contaminated soils, groundwater, soil gases or building materials, as summarized briefly in Table 10. The discussion that follows is limited to specific project impacts of excavation and related earth-moving and site preparation activities, such as grading. Site investigation, site remediation, and UST removal are mitigation actions; impacts of those activities are discussed in Chapter VI, Mitigation Measures, pp. 136 to 142.

SPECIFIC PROJECT IMPACTS

Collection and analysis of samples have determined that contaminated fill and contaminated groundwater are present at certain portions of the project site. In addition, although there is no documentation that a UST exists at the property, test results suggest the possibility of a former fuel leak, and leaking or intact USTs may be encountered at the project site during excavation. Site remediation would be carried out as part of the project.

Health and Safety

The following hazardous materials descriptions are intended to provide basic information about toxicological characterization of the contaminants of concern; as to the actual risk posed by the presence of such materials at the project site, only an appropriate risk assessment could determine the actual risk, if any, posed:

TABLE 10: GENERIC HAZARDOUS MATERIALS-RELATED IMPACTS OF PROJECT ACTIVITIES

Project Activity	Potentially Contaminated Media / Structures	Potential Impacts
Site investigation	Soil, groundwater	Health of workers and/or public
Excavation and site preparation	Soil gases, soil, groundwater	Health of workers, public and/or environment
Dewatering	Groundwater	Health of workers, public, and/or environment
Possible underground storage tank closure	Tank, vapor, soil	Health and safety of workers and/or public
Site remediation	Soil gases, soil, groundwater	Health of workers, public and/or environment

SOURCE: Environmental Science Associates, Inc.

- *Benzidine*. Benzidine is a human-made chemical with cancer-causing properties. It is a known urinary tract carcinogen with an average latency period of sixteen years./3/ Routes of exposure are inhalation, skin absorption, and ingestion of dust. California regulations consider a concentration of 10 mg/kg of benzidine in soil to be hazardous, and 1000 mg/kg to be extremely hazardous./4/ Benzidine concentrations in portions of the site's soils exceeded those standards; available information about benzidine contamination is described in Chapter IV, Environmental Setting, pp. 51 to 61. The most likely sources of contamination would be the former coke storage yard and historic gas works wastes.

- *Polynuclear aromatic hydrocarbons (PNAs)*. PNAs are a group of closely related organic compounds having chemical structures made up of two or more associated aromatic rings. All PNA compounds are toxic at particular concentrations, and several are carcinogenic. PNAs are produced as by-products when petroleum compounds are incompletely burned; they also occur naturally as products of plant biosynthesis. Potential routes of exposure are inhalation and ingestion. Acute toxicity does not appear to be a characteristic of PNAs, but several of the compounds are known to cause cancer./3/ DHS guidelines specify 10 mg/kg and 100 mg/kg to be cleanup levels for carcinogenic and noncarcinogenic PNAs, respectively./5/ PNA levels on portions of the site violated the standards; available information about PNA contamination is described in Chapter IV, Environmental Setting, pp. 51 to 61. The most likely sources of PNA contamination would be the old coke storage yard and the gas works wastes.

- *Volatile organic compounds.* These include benzene, ethylbenzene, toluene, and xylenes (BETX). These are widely used aromatic compounds found in gasoline and other petroleum products. Benzene is a carcinogen. The primary route of exposure is inhalation of vapors. The presence of BETX compounds in soil or groundwater may indicate serious contamination depending on concentration and is often indicative of a UST leak. Available information about BETX contamination is described in Chapter IV, Environmental Setting, pp. 51 to 61. The most likely sources of contamination would be the former gas and oil storage area, possibly from a leaking UST.

Excavation, if improperly managed, could directly expose site workers, the public, or the environment to those contaminants.

Approximately 15,000 cubic yards of excavation is planned as part of the project. On the basis of soil test results, Dames & Moore estimated that roughly 6,800 to 9,100 cubic yards of excavated soil could be classified as hazardous and the remaining 5,900 to 8,200 cubic yards of soil would be classified as nonhazardous, subject to confirmation during field activities./1/ Unless managed with established and appropriate procedures, excavation, handling, and disposal of contaminated fill or groundwater would be activities comprising principle threats of the project to public health and safety.

In addition to the known hazards, a variety of contaminants (particularly metals) have been found in San Francisco waterfront fill. Disturbance of presently untested areas of the site could also have impacts. As the entire site is paved and covered, few routes of exposure for potential hazards associated with fill material currently exist at the project site. Impacts could occur only when the fill is disturbed. Without excavation, no impacts would be anticipated. The potential impacts of excavation of contaminated fill in any amounts can be mitigated (see Chapter VI, Mitigation Measures, pp. 141 to 142).

Underground Storage Tanks

No readily available records indicate that underground storage tanks (USTs) have been used on the site. However, caution regarding USTs is warranted for several reasons. The property is in the area of San Francisco that has a history of UST use and abandonment. Any of the industries known to have occupied the site could have used USTs for fuel storage. Most importantly, the presence of volatile organic compounds in the soil near the location historically designated for "gas and oil storage" suggests the possibility of a local leak or spill, possibly from a UST. For these reasons, it is possible that one or more USTs could exist on the property.

The contents of USTs may be hazardous; a previously unknown UST, uncovered or disturbed during excavation, could threaten the health and safety of site workers. A leaking UST could pose additional threats to groundwater resources and the environment, and could also pose a possible explosion hazard as well.

If a UST were found at the property during construction activities, it would have to be closed in place or removed as part of the project. Closure of a UST in place would likely cause minimal exposure of workers and the public to potential hazards. A UST left in the ground, however, could present a long-term source of potential contamination to the environment. UST removal could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors. Risks would be minimized by following required procedures for UST cleaning and removal. In San Francisco, both the Fire Department and Department of Public Health supervise UST removals to enforce enactment of appropriate safety procedures and soil sampling and testing provisions. Removal of a tank, if found, would be done under the guidance of those agencies, as required by law.

Site Remediation

For the project site, site remediation is expected to be required for both soils and groundwater. Site remediation would be guided by a Site Mitigation Plan, as required by San Francisco's "Analyzing the Soil for Hazardous Wastes" Ordinance. A Site Mitigation Plan generally includes, at a minimum, the following: proposed methods of treating hazardous soils in a manner that would render them nonhazardous or otherwise protect public health and safety; plans for final disposal of soils, treated or otherwise; and plans for handling, testing, treating, and disposing groundwater during dewatering. Under the "Analyzing the Soil for Hazardous Wastes" ordinance, the report must also include a statement signed by the report preparer certifying that he or she is qualified to prepare the Site Mitigation Plan and that the mitigation measures identified in the report would protect public health and safety. Under the San Francisco ordinance, if further investigation (if any occurs) determined that additional areas of the site were contaminated, or if excavation or remediation plans changed at any stage of the project, a revised report satisfying ordinance requirements must be prepared and submitted to the San Francisco Department of Public Health and the San Francisco Department of Public Works.

Site remediation measures, in themselves, could have impacts. During site remediation, workers, and possibly the public, could be exposed to chemical compounds in soils, soil gases, or groundwater. The public and the environment could be exposed to airborne chemical compounds

migrating from a site under remediation. Accidents during transportation of contaminated soils and/or groundwater could lead to exposure of the public and the environment to the chemical compounds. Exposure to hazardous materials could cause various short-term or long-term health effects. For particular substances, such health effects are described in standard references./3/ Worker and public health and safety requirements described in Appendix F, pp. A.54-59 would apply during remediation activities.

Potential impacts of remediation would be mitigated, in part, by legally required safety and hazardous waste handling and transportation precautions. For hazardous waste workers, federal Occupational Safety and Health Administration (OSHA) regulations mandate an initial 40-hour training course and subsequent annual training review. Additionally, site-specific training would be required for some workers. In responsible agency review of mitigation plans, procedures for protection of the public during remediation would be evaluated. These measures, along with application of clean-up standards, would serve to protect human health and the environment during site remediation, thus minimizing remediation impacts.

Additional site investigation could be performed as part of site remediation Additional investigation could include collection of soil and/or groundwater samples at the site, transportation of the samples to an analytical laboratory, and analysis and reporting. At the project site, workers directly engaged in the sampling activity would face the greatest potential for exposure. The public could be exposed to contaminants if an accident during sample transportation were to occur, or if access to the project site were not controlled. Because relatively small amounts of material are collected as samples, exposure to potential hazards during site investigation would be limited, and associated impacts would be localized.

CUMULATIVE IMPACTS

If contaminated fill were to be removed from the site during project implementation, the project would contribute to cumulative impacts on the region's waste handling capacity. Treatment and disposal of hazardous wastes are issues of national importance. Federal and state legislation is attempting to address those issues. At the Federal level, the Resource Conservation and Recovery Act Hazardous and Solid Waste Amendments of 1984 prohibit the land disposal of untreated wastes as of May, 1990 (the "land ban"). EPA currently has promulgated treatment standards for the applicable hazardous wastes. Wastes that meet the standards are not subject to the prohibition and may be land disposed. The law states that if there is insufficient treatment capacity nationwide, the ban date may be extended for up to two years. In addition, the EPA

may grant a petition to allow land disposal of an untreated waste at any specific site upon demonstration that no migration of any hazardous constituents can occur from the site./6/

California law, the Hazardous Waste Management Act of 1986, is similar to Federal land ban law. It specifies that after May, 1990, hazardous wastes must be treated to adopted standards for disposal within the state. California law also encourages recycling and reuse, and allows shipment out-of-state for hazardous wastes that cannot meet treatment standards./6/

Landfill space for hazardous waste is limited. As of mid-1989, there were twenty-four hazardous waste landfills in the United States that were open to commercial hazardous waste generators. Of these, seven are located in western states./7/ On a national level, hazardous waste landfill space is limited and will grow even more limited as landfill capacities gradually become exhausted. The intent of the land ban legislation is to address the fundamental error of reliance on land disposal by forcing waste generators and handlers to seek alternatives. Because hazardous waste landfill space is limited and efficient and environmentally acceptable hazardous waste treatment technologies have yet to be developed fully, handling of hazardous waste is becoming an increasingly important problem.

NOTES - Hazardous Materials

/1/ Dames & Moore, *Site History and Subsurface Investigation, 300 Howard Street, San Francisco, California*, prepared for Bechtel Investments, Inc., October, 1990.

/2/ Provisions of San Francisco's "Analyzing the Soil for Hazardous Wastes" ordinance call for a site history and soils investigation to be conducted prior to issuance of building permits for development involving excavation of more than 50 cubic yards of soil. If any subsurface material exceeding hazardous waste standards is discovered during soil sampling activities, additional investigations and/or site remediation, overseen by appropriate state and local agencies, can be required before issuance of a building permit.

Under specific provisions of the ordinance, soils must be analyzed for the following chemical parameters: persistent and bioaccumulative toxic inorganics (e.g. metals), volatile organics, PCBs, cyanides, pH, flammability, sulfides, methane and other flammable gases, and any other parameters designated by the Director of the Department of Public Health. The report cited under Note /1/ was done in order to comply with provisions of the Soils Analysis Ordinance.

/3/ Marshall Sittig, *Handbook of Toxic and Hazardous Chemicals and Carcinogens*, Second Edition, Noyes Publications, Park Ridge, New Jersey, 1985, pp. 118-119, 739-742.

/4/ California Code of Regulations, Title 22, Article 11, Section 66696, "Toxicity Criteria."

/5/ Bufton, Beth, Toxic Substances Control Division, California Department of Health Services, telephone conversation, January 12, 1990.

/6/ California Department of Health Services, "Land Disposal Restriction Newsletter," Toxic Substances Control Division, Alternative Technology Section, January, 1988.

/7/ EI Digest, *Industrial Hazardous Waste Management*, Environmental Information, Limited, February, 1989.

K. GROWTH INDUCEMENT

The project would introduce office use on the project site, providing about 394,780 sq. ft. of gross floor area, of office space and about 15,300 sq. ft. of retail space (a net increase of about 12,000 sq. ft.). The project would result in the loss of a 29,170 sq. ft. surface parking lot and a 2,500 sq. ft. vacant lot. Employment at the site would increase to about 1,615 people (there are currently six persons employed on the site). Occupants of the proposed project could include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. The increase in employment at the project site, therefore, would not necessarily represent employment that is new to San Francisco. If the project were fully leased, however, and the office space of the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco could increase by about 1,615 jobs due to the project. Approximately 2,340 additional jobs would be supported indirectly in San Francisco through the multiplier effect.

If marketed successfully, the project, together with other planned office development, could have growth-inducing effects by demonstrating a market for office space in this area. This could thereby encourage similar development on lots (including smaller lots assembled for development) currently occupied by low- or mid-rise buildings containing business support services. Increases in downtown office space and employment would contribute to continued growth of local and regional markets for housing, goods, and services. These effects would be less extensive were the vacancy rate for office space to continue to rise. Should this occur, projected increases in downtown employment would be less and the growth in demand for goods, services and housing would be lower.

It is expected that some downtown workers, including some in the project, would want to live in San Francisco. Employment growth, however, would not be reflected directly in increases in demand for housing and city services to residents, as some new jobs would be held by individuals who already live and work in the City; who live in the City but previously either did not work, or worked outside the City; or who live in surrounding communities. New downtown workers would also increase demand for housing in other parts of the Bay Area.

Any net increase in employment downtown would increase the demand for retail goods and services in the area. The project would intensify this demand by increasing the amount of employment on the site, thereby increasing demand for goods and services in the vicinity. Increases in employment downtown would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. In response, demand would increase for existing space and possibly for further new development.

The project would be built in a developed urban area, and no expansion to the municipal infrastructure not already under consideration would be required to accommodate new development and increased employment due to, or induced by, the project.

VI. MITIGATION MEASURES PROPOSED TO MINIMIZE POTENTIAL ADVERSE IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been, or would be, voluntarily adopted by the project sponsor or project architects and contractors and thus are proposed; some are under consideration. Implementation of some may be the responsibility of public agencies. Measures under consideration may be required by the City Planning Commission as conditions of project approval, if the project were to be approved. Each mitigation measure and its status is discussed below.

There are several items required by law which would serve to mitigate impacts, and are summarized here for informational purposes. These measures include: no use of mirrored glass on the building to reduce glare, as per City Planning Commission Resolution 9212; creation of new housing associated with housing demand of employees generated by the project, pursuant to Section 313 of the City Planning Code; contribution of funds for transportation service per the Transit Impact Development Fee, Board of Supervisors Ordinance #224-81; contribution of funds to increase park space in C-3 districts, pursuant to Section 139 of the Planning Code; contribution of funds or provision of on-site building space for child care facilities pursuant to Section 314 of the Planning Code; provision of off-street bicycle storage pursuant to Section 155 of the Planning Code; provision of transportation brokerage service to coordinate a transportation management program pursuant to Section 163 of the Planning Code; priority use of off-street parking in the project for the physically handicapped, travellers in vanpools and carpools, and short-term trips, pursuant to Section 155 of the Planning Code; provision of building directories and signs for service elevators located in loading areas, pursuant to Section 155 of the Planning Code; and limitation of construction-related noise levels, pursuant to the San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code, 1972); preparation of a Site Mitigation Plan in accordance with (Maher) Ordinance #253-86; consultation with and approval from the San Francisco Department of Public Works Industrial Waste Division if treated groundwater were to be discharged to the City sewer; handling and transportation of hazardous wastes done under manifest and restricted to persons with appropriate training and licensing; and observance of federal and state OSHA safety requirements for hazardous waste sites including the hazardous waste site safety training requirements of 29 CFR 1910.120.

Additional measures which are not required by legislation but which would also serve to mitigate environmental impacts appear below. Mitigation measures preceded by an asterisk (*) are from the Initial Study (see Appendix A, pp. A.1-30).

CULTURAL RESOURCES

MEASURES PROPOSED AS PART OF THE PROJECT

*• The sponsor would retain the services of an archaeologist. The Environmental Review Officer (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

  Given the archival history of the project site, an historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO would also require cooperation of the project sponsor in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

*• Should archaeological resources be found following commencement of excavation activities, the archaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific mitigation measures, if necessary. Excavation or construction activities which might damage the discovered cultural resources would be suspended for a maximum of four weeks (cumulatively for all instances where the ERO has required a delay in excavation or construction) to permit inspection, recommendation and retrieval, if appropriate.

*• Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed in an appropriate repository as determined by the ERO. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University along with three copies to the ERO.

TRANSPORTATION

MEASURES PROPOSED AS PART OF THE PROJECT

- The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) would be done in such a way as to minimize interference with pedestrian traffic.

- Secure bicycle storage facilities would be provided for project commuters and short-term visitors which would, at a minimum, provide safe shelter for the seven bicycle spaces that would be required in the project.

- While subsurface sidewalk vaults are discouraged, the project sponsor would design subsurface sidewalk vaults to allow for possible future widening of adjacent streets. Vault design shall be of sufficient strength to carry maximum vehicular live and dynamic loads. Design of the vault area to accommodate street trees could also be made, subject to Department of Public Works approval. In addition, should vaults exist or be installed as part of the project, the project sponsor would accommodate and pay for the installation of all subsurface footings, supports and foundations as may be required for future public improvements such as street lights, street trees, trolley wire poles, signs, benches, transit shelters, etc. within project vault areas. Placement of such improvements is entirely within the discretion of the City.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

- During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic conflicts and to accommodate queueing of MUNI buses prior to the peak hours. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Department of Parking and Traffic, the Fire Department, MUNI and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or which later become known.

- The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for MUNI trolley wires on the proposed building wherever necessary or agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense.

- The parking driveway would include warning devices (lighted signs and noise-emitting devices) to alert pedestrians to vehicles exiting the structure.

MEASURES THAT COULD BE IMPLEMENTED BY PUBLIC AGENCIES

- Coordinate work schedules of Pacific Gas and Electric Company and other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This should be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP). In-street utilities should be installed at the same time as the street is opened for construction of the project to minimize street disruption.

- The City could act upon or endorse the implementation of transportation mitigations described in the Mission Bay EIR Vol. II, Section VI.E, Mitigation, pp. VI.E.214-VI.E.217 for the year 2000 and VI.E.224-VI.E.231 for 2020, and in the South of Market EIR, pp. 189-194. The measures for the year 2000 include: constructing and maintaining rail rapid transit lines from downtown San Francisco to suburban corridors and major non-downtown centers in San Francisco; increased funding for Vehicle Acquisition Plans for San Francisco and regional transit agencies to expand existing non-rail transit service; providing exclusive transit lanes on City streets and on freeways; reducing incentives to drive by discouraging long-term parking; encouraging carpools, vanpools, and bicycle use; improving pedestrian circulation within downtown San Francisco; and providing transportation brokerage services. The Mission Bay EIR describes various types of measures to illustrate the magnitude of improvements needed to mitigate the impacts of regional growth in 2020.

Some of the implementing actions would require approval by decision-makers outside the City and County of San Francisco; many of the measures would require action by City agencies other than the City Planning Commission, such as the San Francisco Public Utilities Commission and/or Board of Supervisors. All except such things as providing transportation brokers would require funding from or approval by MTC. These measures are system-wide measures that must be implemented by public agencies. Other than project-specific measures such as the relevant transportation mitigation measures described above as part of the project or such measures as the Transit Impact Development Fee assessment required by San Francisco ordinance 224-81 which contribute indirectly to implementation of these system-wide measures, it is not appropriate to impose mitigation at system-wide levels on individual projects.

AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

*• The project sponsor would require the contractor to sprinkle demolition sites with water continuously during demolition activity; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling of motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

Provisions contained in Section 163 of the City Planning Code, requiring the project to institute a transportation management program and provide on-site transportation brokerage services, also would reduce air quality impacts of the project.

NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

*• As recommended by the Environmental Protection Element of the San Francisco Master Plan, an analysis of noise reduction measures would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features could include fixed windows and climate control.

• The project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.

• The project sponsor would consult with the Department of Public Works to determine the time when pile driving would cause the least disturbance to neighboring uses. The project sponsor would require that the construction contractor limit pile driving activity to result in least disturbance. This could require a work permit from the Director of Public Works pursuant to San Francisco Noise Ordinance Section 2908, if pile driving during daytime hours is determined to be less disruptive to neighboring uses.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

- The project sponsor would require the general contractor to construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as five dBA, and to locate stationary equipment in pit areas or excavated areas, as these areas would serve as noise barriers.

GEOLOGY/TOPOGRAPHY/HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

*• A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by a California-licensed geotechnical engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project.

*• If the project were to include dewatering, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.

*• The project sponsor would require the general contractor to install and maintain sediment traps in local stormwater intakes during the construction period to reduce the amount of sediment entering the storm drain/sewer lines, if this is found necessary by the Industrial Waste Division of the Department of Public Works.

- The final soils report would also recommend whether or not watering of piles of adjacent structures would be necessary. If it were found to be necessary to water adjacent piles, the project sponsor would ensure that the general contractor complied with recommendations of the soils report.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

- Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor the level of the water table and other instruments would be used to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt this settlement. The project sponsor would delay construction if necessary. Cost for the survey and any necessary repairs to service under the street would be borne by the project sponsor.

- If dewatering is undertaken for the project, the groundwater level in the site vicinity should be monitored. If lowering of the groundwater table were to threaten wooden pile foundations, groundwater recharge would be used to stabilize the groundwater level.

WATER QUALITY

MEASURE PROPOSED AS PART OF THE PROJECT

*• See the second and third measures under Geology/Topography/Hydrology, above, for mitigation proposed to prevent sediment from entering storm sewers.

HAZARDS

MEASURES PROPOSED AS PART OF THE PROJECT

- A site-specific Safety and Health Plan for hazardous materials and waste operations would be prepared and submitted to the San Francisco Department of Public Health before site activities would proceed. The site-specific Safety and Health Plan, which would be applicable to all activities at the site prior to completion of site remediation, would establish policies and procedures to protect workers and the public from potential hazards posed by hazardous wastes. The Plan would be prepared according to federal and California OSHA regulations for hazardous waste site Safety and Health plans (if such regulations are not adopted prior to initial site activities, National Institute for Occupational Safety and Health guidelines /1/ would be followed). The site safety officer's log would be made available to the San Francisco Department of Public Health for inspection.

- The site mitigation plan would include a dust control program, to minimize potential public health impacts associated with exposure to contaminated soil dust.

- Reports (including sample locations, chain of custody forms, and laboratory analysis reports) of further site investigations (if any) would be sent to the San Francisco Department of Public Health.

- A report describing the remediation process in detail and certifying completion of remediation would be prepared by a Registered Environmental Assessor (REA) or registered engineer, and submitted to the San Francisco Department of Public Health. The report would include copies of hazardous waste transport manifests.

- In order to reduce potential injury to building occupants during an earthquake or other catastrophic emergency, an evacuation and emergency response plan would be developed by the project sponsor of building management staff, in consultation with the Mayor's Office of Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

- To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

- Prior to any excavation, a magnetic tank-locating survey would be carried out to ascertain whether any underground tanks exist at the site, and if so, their locations. If USTs were determined to be present, the San Francisco Department of Public Health would be consulted to determine whether they should be removed or left in place (as required by law).

- From the time that the current pavement covering the site is taken up until the time that all remedial activities have been completed, a buffer zone would be put in place around the contaminated area and site access would be restricted to necessary personnel. This would serve to prevent impacts associated with accidental public access to the site.

- A ruling from the State Department of Health Services would be sought regarding appropriate regulatory threshold levels for PNAs in soil, and the RWQCB would be contacted regarding appropriate cleanup levels for the contaminated groundwater. Copies of the written requests and any response would be filed with the San Francisco Department of Public Health.

- The project sponsor would employ licensed brokers or registered hazardous waste treatment engineers to handle its hazardous waste disposal needs, if any. Use of brokers or registered engineers would promote economical application of latest and best methods for waste handling of contaminated soils, such as recycling, reuse, waste minimization, or treatment or destruction of non-reusable waste using newly developing technologies.

NOTE - Mitigation Measures

/1/ National Institute for Occupational Safety and Health, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, U.S. Department of Health and Human Services, DHHS Publication No. 85-115, October, 1985.

VII. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with Section 21067 of the California Environmental Quality Act (CEQA), and with Section 15040, 15081 and 15082 of the State CEQA Guidelines, the purpose of this chapter is to identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or by other mitigation measures that could be implemented, as described in Chapter VI, Mitigation Measures, pp. 136 to 142.

The findings of significant impacts are subject to final determination by the City Planning Commission as part of its certification process for the EIR. This chapter in the Final EIR will be revised, if necessary, to reflect the City Planning Commission's findings.

Cumulative development in downtown San Francisco would have a significant effect on the environment in that it would generate cumulative traffic increases as well as cumulative passenger loadings on MUNI, BART and other regional transit carriers. These cumulative transportation impacts could cause violations of the fine particulate matter standards (PM_{10}) in San Francisco with concomitant health effects. The proposed project would contribute to these cumulative effects.

Currently (1990), assuming the Beale Street on-ramp were to reopen, the eight hour CO concentrations at the Howard / Fremont and Mission / Beale intersections are estimated to violate air quality standards. In addition, the eight-hour CO concentration at the Howard / Fremont Street intersection is estimated to have violated air quality standards with the Beale Street ramp closed. Project emissions alone would not cause the CO standards to be violated, and these intersections are not expected to violate CO standards in the year 2000 if the Beale Street on-ramp is re-opened, because the effects of emission controls on new vehicles would offset increases in traffic volumes and congestion. However, there would still be a potential for violations of the eight hour CO standard at the Howard / Fremont Street intersection in 2000 if the Beale Street on-ramp were to remain closed. The project would contribute to this significant effect.

The project (if occupied) would increase the daytime population on the site above existing conditions, that would be subject to substantial danger during a major earthquake. Although the new office tower would meet the most current building and seismic engineering requirements of

the San Francisco Building Code, and the Marine Electric Building would be seismically reinforced, greater concentrations of people would be susceptible to injury. Such population also would contribute to congestion which, along the debris in the streets, would impede the access of emergency services responding to fire and other earthquake-related emergencies.

VIII. ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses environmental impacts associated with these alternatives, and gives the reasons the alternatives were rejected in favor of the project. Regardless of the sponsor's reasons for rejection, the City Planning Commission could approve an alternative instead of the proposed project if the Commission believed the alternative would be more appropriate for the site.

No alternative site analysis was conducted for this EIR for a number of reasons. Between 1979 and 1985, the City of San Francisco engaged in a lengthy and expensive planning and environmental review process to evaluate and promulgate new controls for development in its Downtown office core, the C-3 districts. Adoption of the Downtown Plan by the Commission in 1984 and of the implementing zoning ordinance by the Board of Supervisors in 1985 represented a fine-tuned effort to control and direct growth so as to preserve the Downtown as a vital commercial and retail center and to enhance the economic vitality of the City, as well as to balance the environmental need of the City as a whole. As part of that effort, the Board of Supervisors, through legislation, adopted a package of mitigation measures that would address the cumulative effects of downtown office growth, including impacts on housing, transportation, open space, childcare, and preservation of architecturally significant buildings.

The policy to concentrate office development in the Downtown C-3 districts has been reaffirmed many times by the City Planning Commission and Board of Supervisors since 1985. Areas situated adjacent to the Downtown areas (the "ring neighborhoods") have been rezoned so as to protect those areas from the encroachment of office development, and to ensure that the Downtown continues to offer the highest commercial density in San Francisco. The ring neighborhoods which have been the subject of Master Plan or zone amendments include North of Market (1987), Rincon Hill (1985), Chinatown (1987), Van Ness Corridor (1988), and South of Market (1990). Thus, any shift of office development outside of the C-3 areas would constitute more than a mere rezoning, but would require a major overhaul and reconsideration of the planning policies for the entire east side of the City. As part of approving the Downtown Plan and implementation ordinances, the Board of Supervisors also established a limit on the amount of office space that could be approved in San Francisco (City Planning Code Sections 320-324), which was further modified following voter approval of San Francisco's Proposition M in 1986. This "annual limit" in effect establishes a policy that some regional office demand be

accommodated in San Francisco but that some also be accommodated elsewhere in the region on sites outside San Francisco. For these reasons, it would be infeasible to consider any alternative sites for this project outside the C-3 districts or outside the jurisdiction of the City.

Finally, an analysis of other sites within the C-3 districts would be infeasible since there are no other sites within the downtown capable of eliminating the main impacts of this project. There are no sites within the Downtown where this project would not contribute to the cumulative impacts of office development. The EIR would find the same level of contribution to the cumulative impacts irrespective of any other Downtown location in which the project site may be located.

Moreover, under the Downtown Plan zoning ordinance, as well as Proposition M, office development in the City in any year is limited to 950,000 sq. ft., with a limitation to 475,000 sq. ft. per year until the space approved in the early 1980's is absorbed. As a result, an annual competition for office space development has been implemented in the City for allocation of the limited square footage of development. This annual competition for office development is based on a system where all eligible projects for that period are evaluated and compared with each other. Among the issues considered is the location of the proposal within the Downtown. This system permits a continuing evaluation of appropriate locations of office space within the Downtown.

For all of the above reasons, no alternative site analysis has been included in this EIR.

A. ALTERNATIVE A: NO PROJECT

DESCRIPTION

This alternative would entail no change to the site. The proposed project would not be built. The parking lot and the vacant lot located on the site would be retained. The three-story Marine Electric Company Building would not be altered.

IMPACTS

If the No Project Alternative were implemented, none of the impacts associated with the project would occur. The environmental characteristics of this alternative would be generally as

described in the Environmental Setting sections of this report (see Chapter IV, Environmental Setting, pp. 31 to 61, for a discussion of existing conditions). Transportation and noise impacts associated with construction of the project would not occur. Future transportation and air quality conditions (as described in Chapter V, Environmental Impacts, pp. 62 to 135) would reflect impacts of cumulative development, minus the project. There would be no change in energy demand on the site. Employment on the site would not increase as it would with the project. Land uses, site views, shadows and winds would not change. This alternative would not contribute to cumulative impacts on transportation at local intersections or to additional air quality impacts. This alternative would not contribute to growth inducement in areas surrounding the project site. The Marine Electric Company building on the site would not be rehabilitated or seismically retrofitted. This alternative would preserve the option to develop a similar or different type of building on the site in the future.

REASONS FOR REJECTION

This alternative was rejected by the project sponsor because it would not use the development potential of the site allowable under the Downtown Plan. It would not use Transferable Development Rights (TDR) which promote preservation and restoration of historic buildings in the C-3 District; it would not further policies of the Downtown Plan concerning location of development; and would not provide new open space nor rehabilitate the Marine Electric Company building.

B. ALTERNATIVE B: NO TRANSFER OF DEVELOPMENT RIGHTS, 5.0:1 FAR

DESCRIPTION

The project as proposed would include the transfer of about 188,500 sq. ft. of development rights from as-yet unidentified sites. This alternative considers a project without TDR. The FAR would be 5.0:1, compared to 11.4:1 for the project.

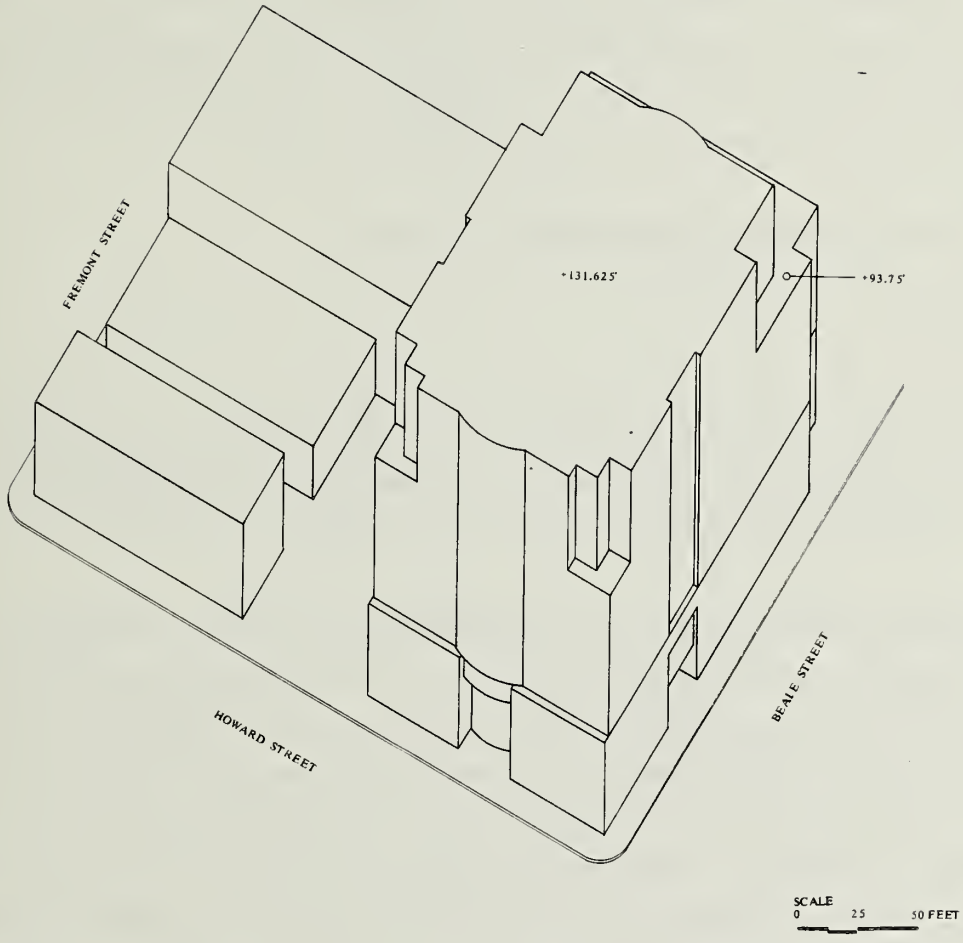
As with the project, the Marine Electric Company building would be rehabilitated and would contain the same amount of retail and office space as it would in the project. The office tower would contain a total of approximately 236,870 sq. ft. and would contain about 169,430 sq. ft. of office space that would count towards the project's gross floor area compared to about 391,650 sq. ft. with the project. The building would be 10 stories tall (about 130 feet) compared to 27 stories (about 350 feet) for the project. Retail and parking space would be the same as in

the proposed project. The building would be the proposed project truncated at the tenth level, with the mechanical penthouse immediately above (see Figure 26). The base would therefore be levels one through seven, with a tower similar to the lower tower of the proposed project from levels eight through ten. Facade articulation and finish materials would be similar to those of the project. The open space requirement for this alternative would be about 3,620 sq. ft., which would be provided on the site in a manner similar to the project.

IMPACTS

Because this alternative would be about 220 feet shorter than the project, it would therefore be less visible in mid- and long-range views than the project. It would comply with all setback and bulk requirements. This alternative would not require the transfer of development rights and would therefore not provide for the preservation of an architecturally or historically significant building elsewhere in the C-3 District, although the Marine Electric Company building located on the project site, rated "B" by Heritage and a Category III building in the Downtown Plan Survey, would be preserved and rehabilitated as it would in the proposed project.

Shadow from this alternative would be about 63% less than with the project. This alternative would not cause winds to exceed the pedestrian comfort criterion to any of the locations tested, nor would it cause the comfort criterion to be exceeded at the test location in the seating area. Total travel demand, air quality and energy impacts associated with on-site uses would be about 52% less than those of the proposed project because of its smaller size. However, traffic and air quality effects on local intersections would be the same as with the project as this alternative would have the same number of on-site parking spaces. Total parking demand generated would be about 56% less than that for the project. Thus, parking demand in the project vicinity that cannot be met within the project parking would be less than that generated by the proposed project. The potential during construction for encountering subsurface hazardous materials would be similar to the project, as a similar amount of site excavation would be necessary. Construction noise impacts would be of a shorter duration, as the construction period would be shorter. This alternative would provide employment for about 725 employees, compared to about 1,615 employees with the project. It would generate a housing requirement of about 70 new dwelling units in San Francisco, based on the OAHPP Formula, compared to 150 with the project. Growth-inducing impacts of this alternative would be similar to those for the project, but of a smaller magnitude.



300 Howard Street ■

SOURCE: TAC

Figure 26
Alternative B: No Transfer of Development Rights, 5.0:1 FAR

REASONS FOR REJECTION

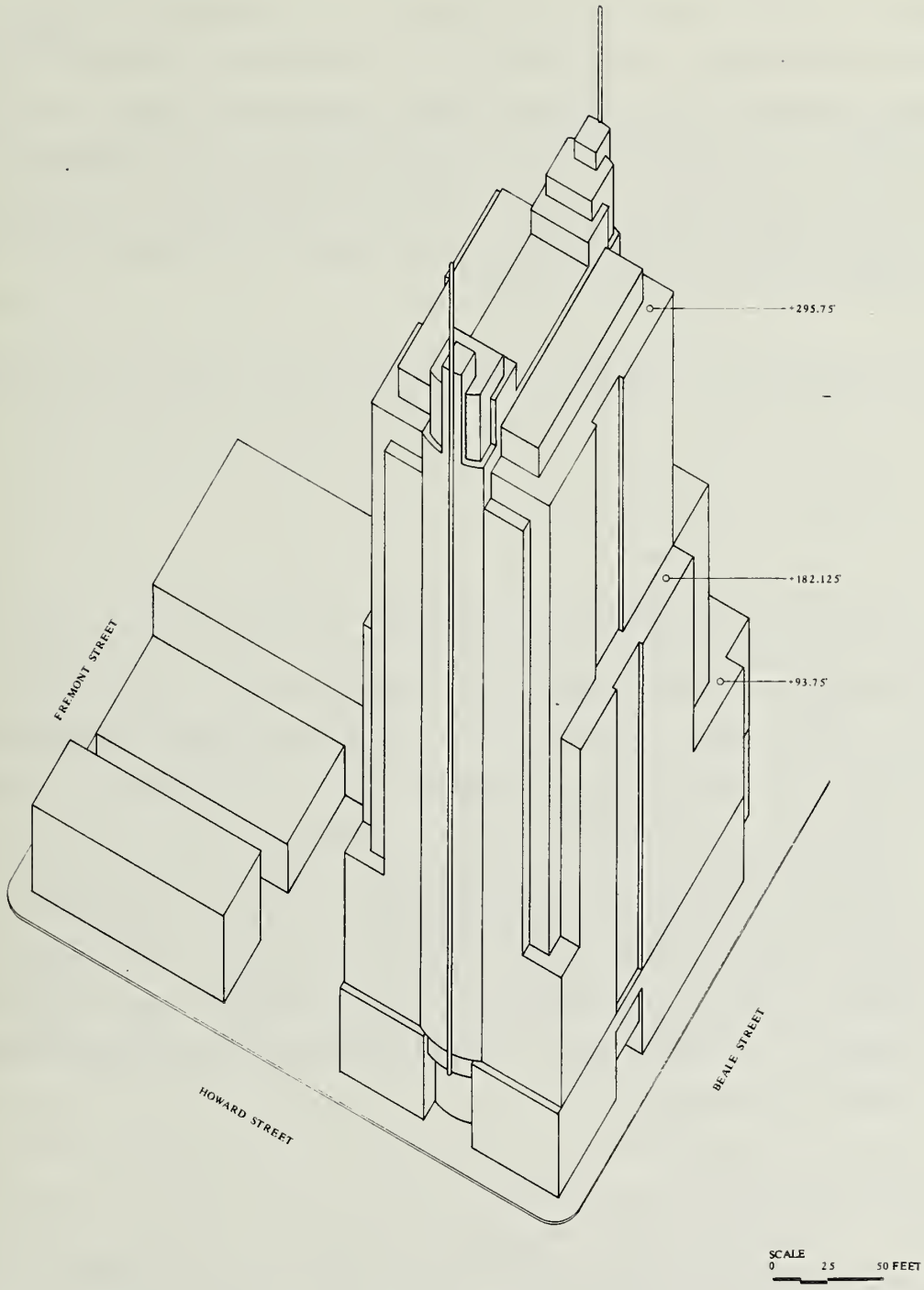
The project sponsor has rejected this alternative because, in the sponsor's opinion, it would not provide for the full use of the development potential permitted under the City Planning Code. This alternative would not provide for the preservation of architecturally significant buildings elsewhere in the C-3 District through the transfer of development rights and would not meet stated policies of the Downtown Plan to redirect growth to the South of Market area and to situate major new development in close proximity to transit nodes. The Downtown Plan designates the area south of the Transbay Transit Terminal for the highest development potential in the South of Market C-3 districts. The sponsor believes that if sites are not developed to their fullest potential in the area specifically identified in the Downtown Plan for increased growth, development pressures would continue in areas outside of where the Downtown Plan attempts to redirect growth, such as the North of Market or Chinatown areas.

C. ALTERNATIVE C: 23-STORY TOWER, 9.7:1 FAR

DESCRIPTION

The project as proposed would include the transfer of about 188,500 sq. ft. of development rights from as-yet unidentified sites. This alternative considers a building requiring 129,750 sq. ft. of TDR. The FAR for this alternative would be 9.7:1, compared to 11.4:1 for the project.

As with the project, the Marine Electric Company building would be rehabilitated and would contain the same amount of retail and office space as it would in the project. The office tower would contain a total of approximately 408,200 sq. ft. and would contain about 333,250 sq. ft. of office space that would count towards the project's gross floor area compared to about 391,650 sq. ft. with the project. The building would be 23 stories tall (about 300 feet) compared to 27 stories (about 350 feet) for the project. Retail and parking space would be the same as in the proposed project. The building would be the same as the proposed project minus three floors from the lower tower and one floor from the upper tower (see Figure 27). The building base would therefore be levels one through seven, the lower tower levels 8 through 14, and the upper tower levels 15 through 23. Setbacks between the base, lower tower, and upper tower would be the same as for the proposed project. Facade articulation and finish materials would be similar to those of the project. The open space requirement for this alternative would be about 6,900 sq. ft., which would be provided on the site in a manner similar to the project. Unlike the project however, the site of the former Fremont House restaurant, while still incuded in this alternative, would not be needed to meet the open space requirement.



300 Howard Street ■

SOURCE: TAC

Figure 27
Alternative C: 23 - Story Tower,
9.7:1 FAR

IMPACTS

This alternative would be about 50 feet shorter than the project, and therefore would be less visible in mid- and long-range views than the project. It would comply with all setback and bulk requirements. The Marine Electric Company building located on the project site, rated "B" by Heritage and III in the Downtown Plan Survey, would be preserved and rehabilitated as it would in the proposed project. Like the project, this alternative would require the transfer of development rights and would provide for the preservation of an architectually or historically significant building elsewhere in the C-3 district.

Shadow from this alternative would be about 14% less than with the project. This alternative would not cause winds to exceed the pedestrian comfort criterion to any of the locations tested, nor would it cause the comfort criterion to be exceeded at test locations within seating areas. Total travel demand, air quality and energy impacts associated with on-site uses would be about 20% less than those of the proposed project because of the smaller amount of office space than with the project. However, traffic and air quality effects on local intersections would be the same as with the project as this alternative would have the same number of on-site parking spaces. Total parking demand generated would be about 22% less than for the project. Thus, parking demand in the project vicinity that cannot be met within the project parking would be less than that generated by the proposed project. The potential during construction for encountering subsurface hazardous materials would be similar to the project, as a similar amount of site excavation would be necessary. Construction noise impacts would be of a shorter duration, as the construction period would be shorter. This alternative would provide employment for about 1,380 employees, compared to about 1,615 employees with the project. It would generate a housing requirement of about 130 new dwelling units in San Francisco, based on the OAHPP Formula, compared to 150 with the project. Growth-inducing impacts of this alternative would be similar to those for the project.

REASONS FOR REJECTION

The project sponsor has rejected this alternative because, in the sponsor's opinion, it would not provide for the full use of the development potential permitted under the City Planning Code. The Downtown Plan designates the area south of the Transbay Transit Terminal for the highest development potential in the South of Market C-3 districts. The sponsor believes that if sites are not developed to their fullest potential in the area specifically identified in the Downtown Plan for increased growth, development pressures would continue in areas outside of where the Downtown Plan attempts to redirect growth, such as the North of Market or Chinatown areas.

D. ALTERNATIVE D: NO PARKING

DESCRIPTION

This alternative would have all the characteristics of the proposed project except that the office tower would contain no parking. Under this alternative, the 130 parking spaces included in the project would not be provided. However, the two off-street loading docks and four van spaces contained in the project would be included in this alternative. Excavation for the office tower would be limited to excavation required for elevator pits and mechanical areas. The exterior physical attributes of the Marine Electric Company building and the office tower would be the same as for the proposed project. Open space provided would be the same as with the proposed project.

IMPACTS

Impacts on views, the shadow and wind environment, urban design and architectural resources, and growth inducement would be the same as for the proposed project. Construction noise impacts for this alternative would be slightly less as the office tower would require less excavation under this alternative than the project. Travel demand, air quality and energy impacts associated with on-site uses would be the same as those of the proposed project because the amount of office and retail space would be the same as with the project. The parking demand generated by this alternative would also be the same as that generated by the project. Traffic and air quality effects on local intersections, however, would be less than with the project as this alternative would have no on-site parking spaces except for loading vehicles. While traffic impacts associated with this alternative would be dispersed over a larger area than the project, this alternative would increase parking demand in the project vicinity beyond what would be generated by the project. The potential during construction for encountering subsurface hazardous materials would be less than with the project, as a smaller amount of site excavation would be necessary. This alternative would provide employment for about the same number of employees (1,615) as the project. Because this alternative would contain the same amount of office space as the proposed project, this alternative would generate a housing requirement of the same number of new dwelling units in San Francisco (150) as the project.

REASONS FOR REJECTION

The project sponsor has rejected this alternative because, in the sponsor's opinion, it would not provide for the full use of the development potential of the site permitted under the City Planning

Code; it would not provide the amenity of on-site parking; it would not partially meet the demand for increased parking generated by the project; and it would not meet the objectives of the project sponsor.

E. ALTERNATIVE E: LAND USE VARIANT FOR THE MARINE ELECTRIC COMPANY BUILDING

DESCRIPTION

This variant, currently under consideration by the project sponsor, would have all the characteristics of the proposed project except that the Marine Electric Company building would be developed with one level of restaurant use and two levels of office use (instead of two levels of restaurant use and one level of office use as proposed for the project). The exterior physical attributes of the Marine Electric Company building and the office tower would be the same as for the proposed project.

IMPACTS

Impacts on views, the shadow and wind environment, urban design and architectural resources, construction noise, growth inducement, and the potential during construction for encountering subsurface hazardous materials would be the same as for the proposed project. Travel demand, air quality and energy impacts associated with on-site uses would be about four percent less than those of the proposed project because of the slightly smaller amount of restaurant space and slightly larger amount of office space than the project. The difference in parking demand generated by this variant would be less than one percent from that generated by the project. Traffic and air quality effects on local intersections would be the same as with the project as this variant would have the same number of on-site parking spaces. This alternative would provide employment for about the same number of employees (1,615) as the project. Based on the OAHPP Formula, this variant would generate a housing requirement of about the same number of new dwelling units in San Francisco (150) as the project.

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Whisler-Patri
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Attn: Marie Zeller

Eunice Willette
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Bethea Wilson & Associates
Art in Architecture
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San Francisco, CA 94115

ADJACENT PROPERTY OWNERS

3718/012
301 Howard Street Associates
c/o Gene Mays
215 Fremont Street
San Francisco, CA 94105

3719/010, 011
Glenn and Margaret Ray
31 Bridgeway Pz
San Francisco, CA 94111

3720/001
California Department of Transportation
Transportation Planning
P. O. Box 7310
San Francisco, CA 94120
Attn: Gary Adams

3720/001
San Francisco Municipal Railway
MUNI Planning Division
949 Presidio Avenue, Room 204
San Francisco, CA 94115
Attn: Peter Straus

3720/001
Metropolitan Transportation Commission
101 Eighth Street
Oakland, CA 94604
Attn: Jeff Georgevich

3720/001
SamTrans
Planning/Engineering
945 California Drive
Burlingame, CA 94010
Attn: Richard D. Gee

3720/001
AC Transit
Research and Planning
508 - 16th Street
Oakland, CA 94612
Attn: Theordore H. Reynolds

3720/006
KSW Properties
244 California Street
San Francisco, CA 94111

3737/001
Fritzi Realty
199 1st Street
San Francisco, CA 94105

3738/011
301 Howard Street Associates
c/o Continental Develop Corp
2041 Rosecrans Av #265
El Segundo, CA 90245

3738/012
Paladin N V
c/o Contintl Dev Corp W G Mays
215 Fremont Street
San Francisco, CA 94105

PROJECT SPONSOR

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Attn: William Bodrug

PROJECT ARCHITECT

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Attn: Frank Hailey

PROJECT ATTORNEY

Brobeck, Phleger & Harrison
Spear Street Tower
One Market Plaza
San Francisco, CA 94105
Attn: Susan Diamond

MEDIA

Associated Press
1390 Market Street, Suite 318
San Francisco, CA 94102
Attn: Bill Shiffman

Leland S. Meyerzove
KPOO - FM
P.O. Box 6149
San Francisco, CA 94101

San Francisco Bay Guardian
2700 - Nineteenth Street
San Francisco, CA 94110
Attn: Patrick Douglas, City Editor

San Francisco Business Times
325 - 5th Street
San Francisco, CA 94107
Attn: Tim Turner

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attn: Martin Halstuk
Dawn Garcia

MEDIA (Continued)

San Francisco Examiner
P.O. Box 7260
San Francisco, CA 94120
Attn: Gerald Adams

The Sun Reporter
1366 Turk Street
San Francisco, CA 94115

Tenderloin Times
146 Leavenworth Street
San Francisco, CA 94102
Attn: Rob Waters

LIBRARIES

Document Library
City Library - Civic Center
San Francisco, CA 94102
Attn: Faith Van Liere

Environmental Protection Agency
Library
215 Fremont Street
San Francisco, Ca 94105
Attn: Jean Circiello

Stanford University Libraries
Jonsson Library of Government
Documents
State and Local Documents Division
Stanford, CA 94305

Government Publications Department
San Francisco State University
1630 Holloway Avenue
San Francisco, CA 94132

Hastings College of the Law - Library
200 McAllister Street
San Francisco, CA 94102-4978

Institute of Government Studies
109 Moses Hall
University of California
Berkeley, CA 94720

X. APPENDICES

APPENDIX A: Initial Study

APPENDIX B: Architectural Resources

APPENDIX C: Wind Study Methodology

APPENDIX D: Transportation

APPENDIX E: Air Quality

APPENDIX F: Hazardous Materials

APPENDIX G: Typical Noise Levels

APPENDIX A: INITIAL STUDY

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: July 12, 1990

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister Street, 6th Floor, San Francisco, CA 94102

Agency Contact Person: Diane Oshima **Telephone:** (415) 558-6253

Project Title: 89.589E:
300 Howard Street

Project Sponsor: Bechtel Investments Realty, Inc.
Contact Person: William Bodrug
Telephone: (415) 768-5220

Project Address: 300 Howard Street
Assessor's Block and Lots: Block 3719, Lots 5, 6, 7, 8, 9
City and County: San Francisco

Project Description: Construction of a 27-story, approximately 350 foot tall office tower (plus one-story, 16 foot roof-top mechanical level); rehabilitation of an existing three-story building; and development of open space on the project site. The office tower would contain approximately 407,430 gsf of office space, 9,350 gsf of retail space, 24,190 gsf of parking (about 90 tandem valet spaces) and lobby, loading and mechanical area. The 342 Howard Street Building would be rehabilitated and would contain approximately 5,950 gsf of restaurant space and 3,170 gsf of office space. 8,600 sq. ft. of exterior open space would be developed on the project site. The project would replace an existing parking lot.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing an Appeal of this Determination to the City Planning Commission: July 23, 1990.

An appeal requires: 1) a letter specifying the grounds for appeal, and;
2) a $75.00 filing fee.

Barbara W. Sahm

BARBARA W. SAHM, Environmental Review Officer

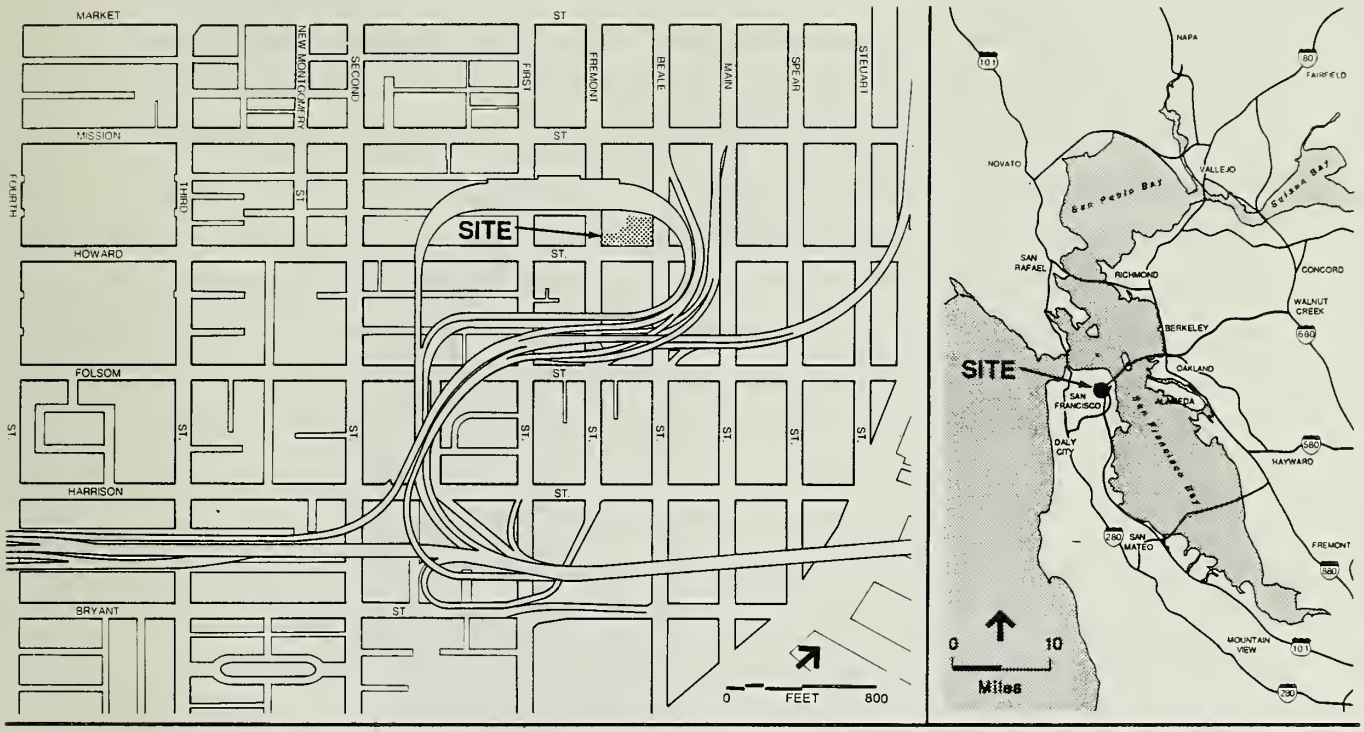
ER5 6/85

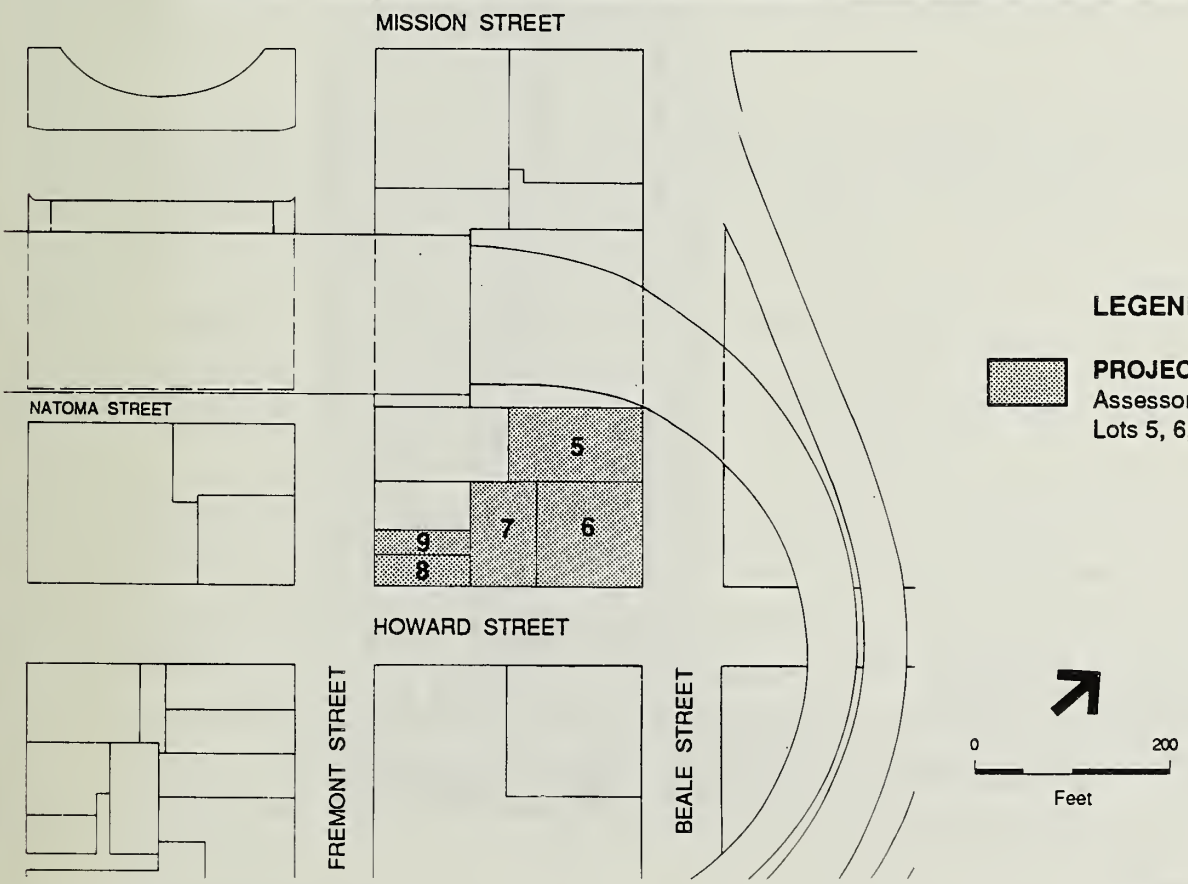
300 HOWARD STREET
INITIAL STUDY
89.589E

I. PROJECT DESCRIPTION

The project site is on the western corner of the intersection of Howard and Beale Streets, Lots 5, 6, 7, 8 and 9 of Assessor's Block 3719 (See Figure 1). The site is located adjacent to the Transbay Transit Terminal, two blocks south of Market Street and two blocks north of the James Lick Freeway (I-80). The 35,003 square foot (sq. ft.) site is currently developed with a 29,170 sq. ft. attendant-controlled surface parking lot with tandem parking for approximately 180 vehicles, a one-story building and a three-story building. The one-story building, located at 193 Fremont Street, was damaged in the October 1989 earthquake and issued a Warning of Violation by the San Francisco Department of Public Works for structural reasons and is currently closed. In light of the structural damage sustained, the building was approved by the City for demolition. This building was formerly occupied by the Fremont House restaurant, containing approximately 2,500 sq. ft. of restaurant use. The three-story building, located at 342 Howard Street, is the Marine Electric Company Building which is designated as a Category III Building in the San Francisco Downtown Plan. The Marine Electric Company Building presently contains approximately 3,300 sq. ft. of restaurant use and 6,600 sq. ft. of vacant space.

The proposed 300 Howard Street project would consist of the construction of a new office tower on the existing parking lot, the renovation of the Marine Electric Company Building, and the development of open space on a portion of the existing parking lot and on the 193 Fremont Street site. The new office tower would be a 27-story, approximately 350 foot tall (plus one-story, 16 foot roof-top mechanical level) office and retail building containing a total of about 469,670 gross square feet (gsf) (See Figure 2). The proposed building would consist of approximately 24,190 gsf of parking including ramps (19,900 gsf excluding ramps; about 90 tandem valet spaces) and 8,390 gsf of mechanical and storage area on one subsurface level, about 9,350 gsf of retail space and 12,120 gsf of lobby and loading area on the ground floor, and approximately 407,430 gsf of office uses on floors 2 through 27. Floor 28 would be a mechanical penthouse containing approximately 8,190 gsf.





SOURCE: Environmental Science Associates, Inc.

300 Howard Street ■

Figure 1
Project Location

SOURCE: TAC

300 Howard Street ■

Figure 2
Howard Street Elevation

The rated Marine Electric Company Building would contain approximately 12,210 gsf, consisting of about 3,090 gsf of basement storage and maintenance space, about 5,950 gsf of restaurant space on the ground floor and second level mezzanine, and approximately 3,170 gsf of office space on the third floor. The proposed project, including both the new office tower and the Marine Electric Company Building, would contain a total of about 481,880 gsf, of which approximately 398,170 gsf would be applicable to the project's floor area ratio (FAR) as calculated under the City Planning Code. The proposed project would also include about 8,600 sq. ft. of exterior open space plus 800 sq. ft of walkway developed on Lots 7 and 9. The proposed project would require the removal of the existing 29,170 sq. ft. parking lot.

The site is in the C-3-0 (SD) (Downtown Office Special Development) Use District and the 350-S Height and Bulk District. The basic permitted floor area ratio (FAR) is 6:1 and the maximum allowable FAR, including transferable development rights (TDR) is 18:1. The FAR of the project would be about 11.4:1, and would require approximately 188,150 gsf of TDR.

Project construction would take about 18-20 months; total construction cost would be about $47,850,000 (1989 dollars). The project sponsor is Bechtel Investments Realty, Inc.; the project architect is The Architects Collaborative, Inc. (TAC).

II. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

The 300 Howard Street project is examined in this Initial Study to identify potential effects on the environment. The cumulative impacts of growth in the C-3 districts were analyzed in the Downtown Plan EIR and updated in the Mission Bay and South of Market Plan EIRs. Current information contained in these area-wide EIRs will be summarized and incorporated by reference in the 300 Howard Street EIR as appropriate. In addition to cumulative impacts, some project-specific potential effects have been determined to be potentially significant, and will be analyzed in an Environmental Impact Report (EIR). They include: land use; visual quality; construction noise; project-related transportation analysis; traffic-generated air quality effects; shadow; wind; project-related employment; toxics; and geology and seismicity.

B. EFFECTS FOUND NOT TO BE SIGNIFICANT

The following potential impacts were determined either to be insignificant or to be mitigated through measures included in the project. As discussed in Section III starting on p. 6, these items require no further environmental analysis in the EIR:

Glare: Mirrored glass would not be used.

Housing: The project would comply with the Office Affordable Housing Production Program Ordinance. Cumulative and indirect effects, including those of the project, are addressed in the Mission Bay and Downtown Plan EIRs.

Operational Noise: After completion, building operation and project-related traffic would not perceptibly increase noise levels in the site vicinity. Operational noise would be regulated by the San Francisco Noise Ordinance and the project would conform to the Noise Guidelines of the Environmental Protection Element of the Master Plan.

Construction Air Quality: Project construction would have short-term impacts on air quality in the site vicinity. Mitigation measures to reduce particulate and hydrocarbon emissions generated during construction activities are included as part of the project (see mitigation measure on pp. 25-26).

Utilities/Public Services: The proposed project would contribute to the cumulative demand for public utilities and services in the downtown. Such impacts anticipated from cumulative downtown development were analyzed in the Downtown Plan EIR and no significant impacts were identified.

Biology: The project site is completely developed; therefore, the project would not affect vegetation or wildlife.

Hydrology: Measures to mitigate potential impacts associated with excavation and dewatering are included as part of the project (see p. 26).

Water Quality: The site is completely covered by impervious surfaces; therefore, the project would not affect drainage patterns or water quality. See also the measures referenced above to mitigate the potential impacts of dewatering and excavation.

Energy/Natural Resources: The project would be designed to comply with performance standards of Title 24 of the California Code of Regulations. Its annual energy budget would be about 167,000 Btu per sq. ft. Peak electrical energy and natural gas use would coincide with PG&E's systemwide peaks. Cumulative and indirect effects, including those of the project, are addressed in the EIR prepared for the Downtown Plan.

Cultural: Based on the findings of archival research, there is minimal likelihood that significant or potentially significant cultural resources lie buried within the confines of the project area. An exception is the possible presence of buried maritime resources. Mitigation measures to provide for on-site archaeological monitoring during subsurface excavation are included as part of the project (see pp. 26-27).

III. ENVIRONMENTAL EVALUATION CHECKLIST AND DISCUSSION

The 300 Howard Street EIR will incorporate information, as appropriate, from Program EIRs that have been previously published. Most of that information is related to cumulative impacts of downtown growth contained in the Mission Bay EIR (Case No. 86.505E), South of Market EIR (Final EIR certified December 7, 1989, Case No. 85.463E), and the Downtown Plan EIR (Final EIR certified October 18, 1984, Case No. EE81.3). The Mission Bay EIR covers the impacts of potential development in a 300-acre area just south of the greater downtown, from Townsend Street to Mariposa Street, east of the I-280 freeway. The South of Market Plan EIR analyzes impacts of development under the proposed South of Market Plan development controls and alternatives in the area generally south of Mission Street to the Mission Bay planning area and east of U.S. 101 to the Rincon Hill area east of Second Street. The Downtown Plan EIR analyzes the impacts of various development policy alternatives in the C-3 (Downtown) zoning districts in San Francisco.

The Mission Bay and South of Market EIRs include the most current estimates of employment growth for the Downtown & Vicinity and for the rest of the City; revised analysis and conclusions regarding overall cumulative transportation impacts in the future; and new cumulative air quality information. (The term "Downtown & Vicinity" means the C-3 District and the areas around it: South of Market, Mission Bay, South Van Ness, Civic Center, and the Northeastern Waterfront. See Mission Bay EIR, Vol. II, pp. IV.4-5). The Downtown Plan EIR contains other cumulative impact

information regarding such topics as energy consumption; community services and seismic effects that also is applicable to the 300 Howard Street project.

Where information from those area-wide EIRs is presented in the 300 Howard Street EIR, it will be incorporated by reference with a summary, pursuant to CEQA Sections 21061 and 21100 (see also State CEQA Guidelines Section 15150). Those reference documents are available for public review at the Office of Environmental Review, 450 McAllister Street, San Francisco.

A. COMPATIBILITY WITH EXISTING ZONES AND PLANS	Not Applicable	Discussed
1) Discuss any variances, special authorizations, or changes proposed to the City	___	X
* 2) Discuss any conflicts with any adopted environmental plans and goals of the City or Region, if applicable.	X	___

The proposed project would comply with the City Planning Code requirements concerning height, bulk and use in the C-3-0 (SD) (Downtown Office Special Development) District and the 350-S Height and Bulk District in which the proposed project would be located. The relationship of the proposed project to the policies of the Master Plan, including the Downtown Plan, and provisions of the City Planning Code, will be discussed in the EIR. The project would not conflict with other adopted plans and goals; however, issues related to compatibility with zoning and plans will be discussed in the EIR.

B. ENVIRONMENTAL EFFECTS

1) Land Use. Could the project:	Yes	No	Discussed
*(a) Disrupt or divide the physical arrangement of an established community?	___	X	X
*(b) Have any substantial impact upon the existing character of the vicinity?	___	X	X

The proposed project site is located south of Market Street, in the C-3-0 (SD) District covered in the Downtown Plan. The proposed project, containing office and retail uses, would constitute an increase in the intensity of the prevailing land uses on the site and

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

in the surrounding area. Land use and zoning issues will be discussed in the EIR, including the project site's possible future use as a below-grade or at-grade right-of-way for an extension of the CalTrain line.

2) Visual Quality. Could the project:	Yes	No	Discussed
*(a) Have a substantial, demonstrable negative aesthetic effect?	___	X	X
(b) Substantially degrade or obstruct any scenic view or vista now observed from public areas?	___	X	X
(c) Generate obtrusive light or glare substantially impacting other properties?	___	X	X

The project's appearance and possible effects on views will be discussed in the EIR. Mirrored glass would not be used in the project; the building would not result in glare affecting other properties. The project would comply with City Planning Commission (CPC) Resolution 9212 which prohibits the use of mirrored or reflective glass. The EIR will, therefore, not discuss glare.

The EIR will discuss the proposed project's relationship to the urban design policies of the Downtown Plan and the objectives and policies of the Urban Design Element of the Master Plan.

3) Population. Could the project:	Yes	No	Discussed
*(a) Induce substantial growth or concentration of population?	___	X	X
*(b) Displace a large number of people (involving either housing or employment)?	___	X	X
(c) Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	___	X	X

There are currently six persons employed on the project site. Two attendants are employed at the existing parking lot, and four persons are employed in the ground-level restaurant of the building at 342 Howard Street. The restaurant at 193 Fremont Street employed nine people prior to its closure after the October 1989 earthquake. Project specific employment information regarding number and type of employees on site with the proposed project will be included in the EIR.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The project would generate a demand for about 150 dwelling units according to the Office Affordable Housing Production Program (OAHPP) formula. The project must comply with the OAHPP, Ordinance No. 358-85, requiring the provision of about 160 units or payment of an in-lieu fee of about $2,740,000./1/ Cumulative and indirect effects including those of this project are addressed in the Downtown Plan EIR and the Mission Bay EIR and will be summarized and incorporated by reference in the 300 Howard Street EIR. The Downtown Plan EIR (EE81.3, Final EIR certified October 18, 1984) and the Mission Bay Draft EIR (86.505E) may be examined at the Department of City Planning, 450 McAllister Street; the San Francisco Main Library; and various branch libraries.

NOTE - Population

/1/ Compliance with the Office Affordable Housing Production Program (OAHPP). Ordinance 358-85, may be achieved through provision of housing units, payment of an in-lieu fee, or a combination of these two methods. The OAHPP uses the following formulas to compute the required number of housing units and the amount of in-lieu fees (San Francisco Planning Code Section 313.5(1) and 313.6(1)):

Net Addition Gross Sq. Ft. Office Space X .000386 = Housing Units
Net Addition Gross Sq. Ft. Office Space X $6.94 = Total Fee

4) Transportation/Circulation. Could the project:	Yes	No	Discussed
*(a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	X	___	X
*(b) Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	X	___	X
(c) Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	X	___	X
(d) Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	X	___	X

Increased employment at the site would increase demand on existing transportation systems. The number of pedestrians in the area would also increase. The project would not alter existing circulation patterns except during construction; its effects on circulation during construction will be discussed in the EIR. The project would decrease the number of parking spaces on the site from 180 to about 90. Trip generation will be discussed in the

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

EIR. Traffic would enter and exit the proposed project's garage on Beale Street, and could affect traffic on Beale Street, a Transit Preferential Street. Localized transportation impacts of the project will be analyzed in the EIR.

The proposed project could cause traffic circulation problems, and increases in traffic, transit and parking demand. The EIR will discuss traffic increases and movement as they relate to the operation of the street and freeway network in the project vicinity, in particular, the I-80 and US 101 ramps in the vicinity.

The cumulative transportation effects of development in the C-3 districts, including the project, are analyzed in the Mission Bay and South of Market Plan EIRs. The cumulative analysis contained in these EIRs regarding transportation will be summarized in the 300 Howard Street EIR, and the project's effects in relation to cumulative impacts will be discussed.

5) Noise. Could the project:	Yes	No	Discussed
*(a) Increase substantially the ambient noise levels for adjoining areas?	X	___	X
(b) Violate Title 24 Noise Insulation standards, if applicable?	___	X	X
(c) Be substantially impacted by existing noise levels?	___	X	X

Demolition, excavation, and building construction would temporarily increase noise in the site vicinity. The construction period would last about 18-20 months, with piledriving taking place during the evenings and weekends. Project construction noise and its possible effects on sensitive receptors will be addressed in the EIR.

The noise environment of the site, like all of downtown San Francisco, is dominated by vehicular traffic noise. The Downtown Plan EIR indicated a day-night average noise level (L_{dn}) of 75 dBA on Howard Street and 74 dBA on Beale Street near the site in 1984, and predicts no audible change for downtown noise levels though 1990./1,2/ The Environmental Protection Element of the Master Plan contains guidelines for determining the compatibility of various land uses with different noise environments. For office uses, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. The project sponsor has indicated that

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

noise insulation measures would be included as part of the design (see mitigation, p. 25). The proposed project would not include housing, so Title 24 Noise Standards would not be applicable.

Project operation would not result in perceptibly greater noise levels than those existing in the area. The amount of traffic generated by the project during any hour of the day, and cumulative traffic increases at the time of project completion, would cause traffic noise levels to increase by one dBA L_{dn} or less. To produce a noticeable increase in environmental noise, a doubling of existing traffic volume would be required; traffic increases of this magnitude would not occur with anticipated cumulative development including the project./3/

The project would be required to comply with the San Francisco Noise Ordinance, San Francisco Police Code Section 2909, "Fixed Source Noise Levels," which regulates mechanical equipment noise. The project site and surrounding area are within a C-3-0 district. In this district, the ordinance limits equipment noise levels at the property line to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between the hours of 10 p.m. and 7 a.m. During lulls in traffic, mechanical equipment generating 70 dBA could dominate the noise environment at the site. The project engineer and architect would include design features in the building to limit mechanical equipment noise levels to 60 dBA. As equipment noise would be limited to 60 dBA to meet the nighttime limit, it would not be perceptible above the ambient noise levels in the project area; operational noise requires no further analysis and will not be included in the EIR.

NOTES - Noise

/1/ San Francisco Department of City Planning, Downtown Plan Environmental Impact Report (EIR), EE81.3, certified October 18, 1984, Vol. 1, Table IV.J.2.

/2/ dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulated the response of the human ear to various frequencies of sound. L_{dn}, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

/3/ See Downtown Plan EIR, Vol. 1, Continuous Section IV.E generally and pp. IV.J.8-18. Increases of 1 dBA or less in environmental noise are not noticeable by most people outside a laboratory situation (National Academy of Sciences, Highway Research Board, Research Report No. 117 (1971)). (See also FHWA Highway Traffic Noise Prediction Model, Report #FHWA-RD-77-108, December 1978, p. 8, regarding doubling of traffic volumes producing increases of 3 dBA or more, which are noticed by most people).

6) Air Quality/Climate. Could the project:	Yes	No	Discussed
*(a) Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	X		X
*(b) Expose sensitive receptors to substantial pollutant concentrations?		X	X
(c) Permeate its vicinity with objectionable odors?		X	X
(d) Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	X		X

Two types of air quality impacts could be expected from the proposed project: long term impacts related to use and operation of the project, and short term impacts from construction activity. Project related traffic and cumulative downtown traffic can be expected to contribute to existing air pollution near the project site and will be discussed in the EIR.

Construction activities would temporarily affect local air quality. Demolition and construction activities would not involve burning of any materials and would not create objectionable odor. Demolition, grading and other construction activities would temporarily affect local air quality for about 20 months, causing a temporary increase in particulate dust and other pollutants. Dust emission during demolition and excavation would increase particulate concentrations near the site. Dustfall can be expected at times on surfaces within 200 to 800 feet. Under high winds exceeding 12 miles per hour, localized effects including human discomfort might occur downwind from blowing dust. Construction dust is composed primarily of particularly large particles that settle out of the atmosphere more rapidly with increasing distance from the source. More of a nuisance than a hazard for most people, this dust could affect persons with respiratory diseases, as well as sensitive electronics or communications equipment. The project sponsor would require the contractor to wet down the construction site twice a day during construction to reduce particulates by at least 50 percent, would require covering soil, sand and other material, and would require street sweeping around demolition and construction sites at least once per day (see mitigation, pp. 25-26).

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Diesel-powered equipment would emit, in decreasing order by weight, nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons and particulates. This would increase local concentrations temporarily but would not be expected to increase the frequency of violations of air quality standards. The project sponsor would require the project contractor to maintain and operate construction equipment in such a way as to minimize exhaust emissions (see mitigation, pp. 25-26). Construction air quality effects require no further analysis.

The cumulative effects on air quality of traffic emissions from traffic generated by development in the Downtown & Vicinity including the project are analyzed in the Mission Bay and South of Market Plan EIRs. The cumulative analysis in the Mission Bay and South of Market Plan EIRs regarding air quality will be incorporated by reference and the project's effects in relation to cumulative effects will be discussed. The analysis and conclusions of these EIRs remain current regarding future and project conditions.

Potential shadowing impacts of the project on sidewalks, parks and other open spaces will be discussed in the EIR. The analysis will include shadow diagrams.

Section 148 of the City Planning Code establishes comfort criteria of 11 mph equivalent wind speed for pedestrian areas and seven mph for seating areas, not to be exceeded more than ten percent of the time, year-round between 7:00 a.m. and 6:00 p.m. Project wind effects including the results of wind tunnel testing and the effects of the project in relation to the City Planning Code criteria, will be discussed in the project EIR.

7) Utilities/Public Services. Could the project:	Yes	No	Discussed
*(a) Breach published national, state or local standard relating to solid waste or litter control?	___	X	___
*(b) Extend a sewer trunk line with capacity to serve new development?	___	X	___
(c) Substantially increase demand for schools, recreation or other public facilities?	___	X	___
(d) Require major expansion of power, water, or communications facilities?	___	X	___

The Downtown Plan EIR concluded that demand for utilities and public services resulting from development in the C-3 districts under the Downtown Plan would not be significant.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The project would fall within this development forecast. The Downtown Plan EIR analysis remains current and valid for future and project conditions. The Downtown Plan EIR (EE81.3, Final EIR certified October 18, 1984) may be examined at the Department of City Planning, 450 McAllister Street.; the San Francisco Main Library and various branch libraries. The community service setting and impact discussions are presented in Vol. 1 pp. IV.F.1-21; Vol. 2, pp. A.6-7 and K.1-13; Vol. 3, part 2, pp. C&R-F.1-7. This topic requires no further analysis in the EIR.

8) Biology. Could the project:	Yes	No	Discussed
*(a) Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	__	X	X
*(b) Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	__	X	__
(c) Require removal of substantial numbers of mature, scenic trees?	__	X	__

Because the site is covered by impervious surfaces, the project would not affect plant or animal habitats. This topic will not be discussed in the EIR.

9) Geology/Topography. Could the project:	Yes	No	Discussed
*(a) Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction).	__	X	X
(b) Change substantially the topography or any unique geologic or physical features of the site?	__	X	X

A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by a California-licensed geologic engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project. Geologic and seismic concerns, including a summary of findings from the geotechnical report and a discussion of seismic issues, will be included in the EIR.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

10) Water. Could the project:	Yes	No	Discussed
*(a) Substantially degrade water quality, or contaminate a public water supply?	___	X	___
*(b) Substantially degrade or deplete groundwater resources, or interfere substantially with groundwater recharge?	___	X	X
*(c) Cause substantial flooding, erosion or siltation?	___	X	X

The site is currently covered with impervious surfaces. The project would cover the site with a building and paved area and therefore would not alter the drainage pattern of the site. Site runoff would drain into the City's combined sanitary and storm drainage system. A mitigation measure to prevent sediment from entering storm sewers is proposed as part of the project (see mitigation, p. 26). The project would not affect drainage patterns or water quality because the site is now entirely covered with impermeable surfaces. No further analysis of this topic is required in the EIR.

11) Energy/Natural Resources. Could the project:	Yes	No	Discussed
*(a) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use them in a wasteful manner?	___	X	X
(b) Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	X

The only current energy consumer on the site is a restaurant on the first floor of the Marine Electric Company Building. Annual energy consumption of this facility is about 110,000 kWh of electricity and about 570 million Btu of natural gas at the source. Annual energy consumption at the Fremont House restaurant prior to its closure after the October 1989 earthquake was about 90,000 kWh of electricity and about 430 million Btu of natural gas at the source. A minimal but unknown amount of energy is consumed by existing parking uses on the site./1,2/

Removal of existing structures would require an unknown amount of energy. Fabrication and transportation of building materials, worker transportation, site development, and building construction would require about 730 billion Btu of gasoline, diesel fuel, natural gas, and electricity./3/ Distributed over the estimated 50-year life of the project, this would be about 14.6 billion Btu per year, or about 20 percent of building energy requirements.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

New buildings in San Francisco are required to conform to energy conservation standards specified by Title 24 of the California Code of Regulations. Documentation showing compliance with these standards is submitted with the application for the building permit and is enforced by the Bureau of Building Inspection.

Table 1 shows the estimated operational energy which would be used by the project. Project demand for electricity during PG&E's peak electrical load periods, July and August afternoons, would be about 1,700 kW, an estimated 0.008 percent of PG&E's peak load of 17,600 MW./4/ Project demand for natural gas during PG&E's peak natural gas load periods, January mornings, would be about 19,500 cu. ft. per day, or about 0.05 percent of PG&E's peak load of about 3.7 billion cu. ft. per day./5/ Annual and peak daily electricity and natural gas consumption are shown in Figures 3 and 4.

Projections of electrical use for growth that would occur in the C-3 district under the Downtown Plan, as analyzed in the Downtown Plan EIR, indicate an increase of about 330-350 million kWh per year between 1984 and 2000, as a result of all new development occurring in the C-3 district. Natural gas consumption is expected to increase by 470 million cu. ft. (about five million therms) per year during the same time period, of which 210 million cu. ft. (about two million therms) per year would be for office uses. These figures remain current for the C-3 district.

Increased San Francisco energy demands to the year 2000 would be met by PG&E from nuclear sources, oil and gas facilities, hydroelectric and geothermal facilities, and other sources such as cogeneration, wind and imports. PG&E plans to continue receiving most of its natural gas from Canada and Texas under long-term contracts.

Project-related transportation would cause additional, off-site energy consumption. Annual project-related trips (about 290,000 auto vehicle trip ends [vte], 180,000 bus person trip ends [pte], 28,000 train pte, 13,000 ferry pte, 27,000 jitney/van/taxi/motorcycle/charter bus pte, 350,000 BART pte, and 440,000 Muni electric pte) would require about 150,000 gallons of gasoline and diesel fuel, and about 1.8 million kWh of electricity annually, as indicated in Table 2. These figures were calculated based on data contained in the Downtown Plan EIR. The total annual transportation energy demand, converted with at-source factors to a common thermal energy unit, would be about 38.7 billion Btu, the energy equivalent of about 7,000 barrels of oil. This projected use is based upon the mix

TABLE 1: ESTIMATED PROJECT ENERGY USE/a,e/

Daily Natural Gas Consumption/b/	
Estimated natural gas consumption per sq. ft.	37.0 Btu/c/
Estimated total natural gas consumption	175.0 Therms
Monthly Electric Consumption/b/	
Estimated electrical consumption per sq. ft.	1.3 kWh (12,900 Btu)/d/
Estimated total electrical consumption	590,000 kWh (6.0 billion Btu)
Annual Consumption	
Estimated total annual natural gas consumption	64,000 Therms (6.0 billion Btu)
Estimated total annual electrical consumption	7.1 million kWh (72.7 billion Btu)
Estimated total annual energy consumption	79.1 billion Btu (14,100 barrels of oil)

/a/ Energy use includes space conditioning, service water heating, and lighting in accordance with allowable limits under Title 24. Estimated electricity includes an additional three kWh/sq. ft./yr., consumed by appliances such as typewriters, computers, coffee makers, etc., than assumed by Title 24 estimates.

/b/ Electricity and natural gas consumption was based on estimates provided by Flack & Kurtz, Consulting Engineers (written communication, February 20, 1990).

/c/ Btu (British thermal unit): a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1 degree Fahrenheit (251.97 calories) at sea level.

/d/ Energy Conversion Factors:

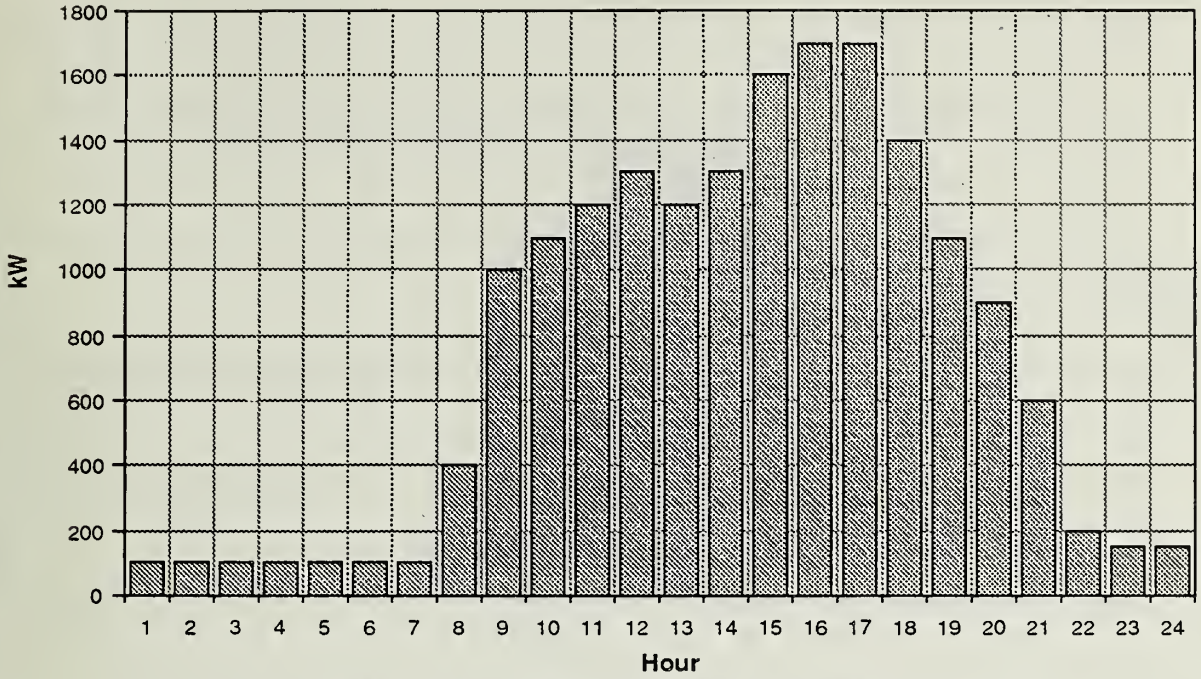
one gallon gasoline	=	125,000 BTU
one kilowatt (kW)	=	10,239 BTU
one therm	=	100,000 BTU
one barrel oil	=	5,600,000 BTU

/e/ Monthly and annual figures may not match due to rounding to three significant digits.

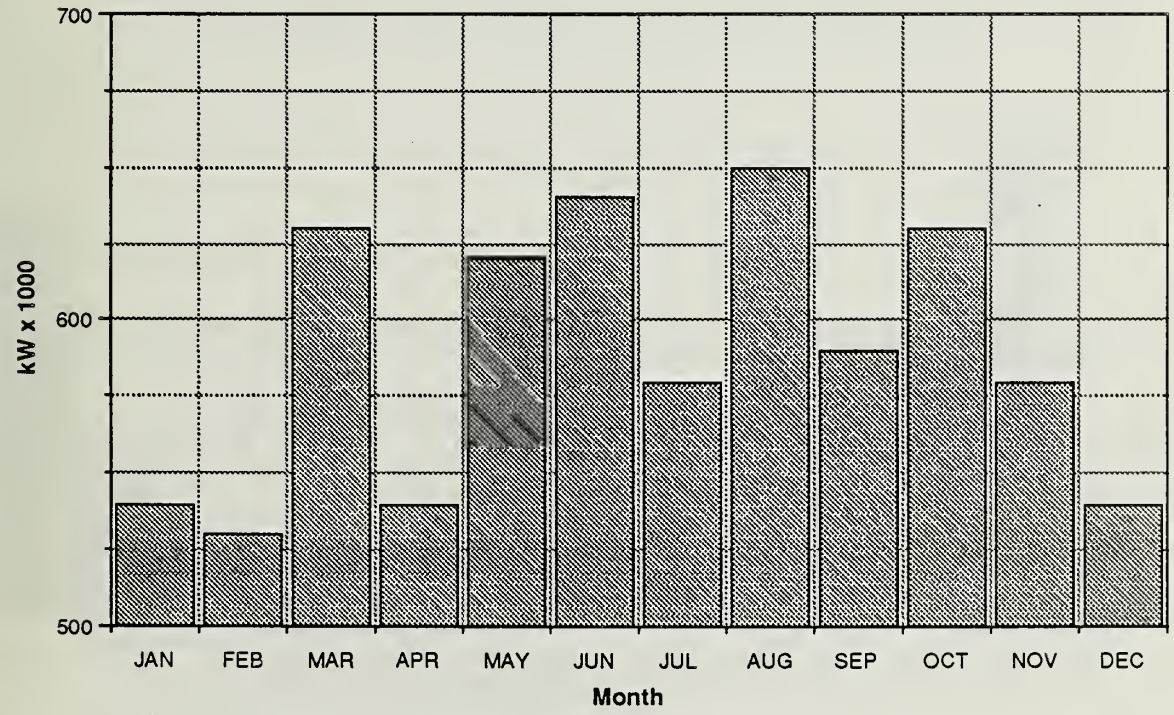
SOURCE: Flack & Kurtz, Environmental Science Associates, Inc., and Department of City Planning

of highway vehicles in California in 1987. Vehicle fuel is expected to decrease as the vehicle fleet becomes more efficient and fuel more expensive.

The Downtown Plan EIR (pp. IV.G.5 - IV.G.19) concluded that energy consumption resulting from development in the C-3 district under the Downtown Plan would not be significant and that conclusion remains valid for the future and project conditions. Energy impacts requires no further analysis and will not be discussed in the EIR.



PEAK DAY ELECTRICAL DEMAND BY HOUR (AUGUST)

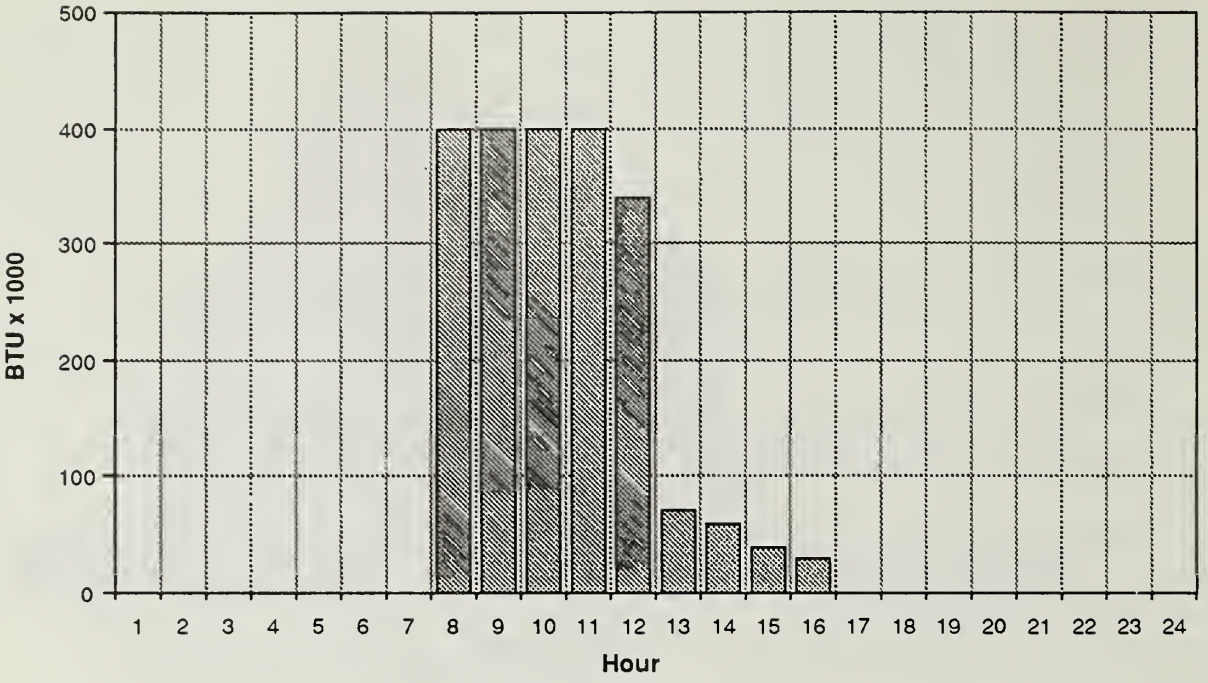


ANNUAL CONSUMPTION OF ELECTRICITY BY MONTH

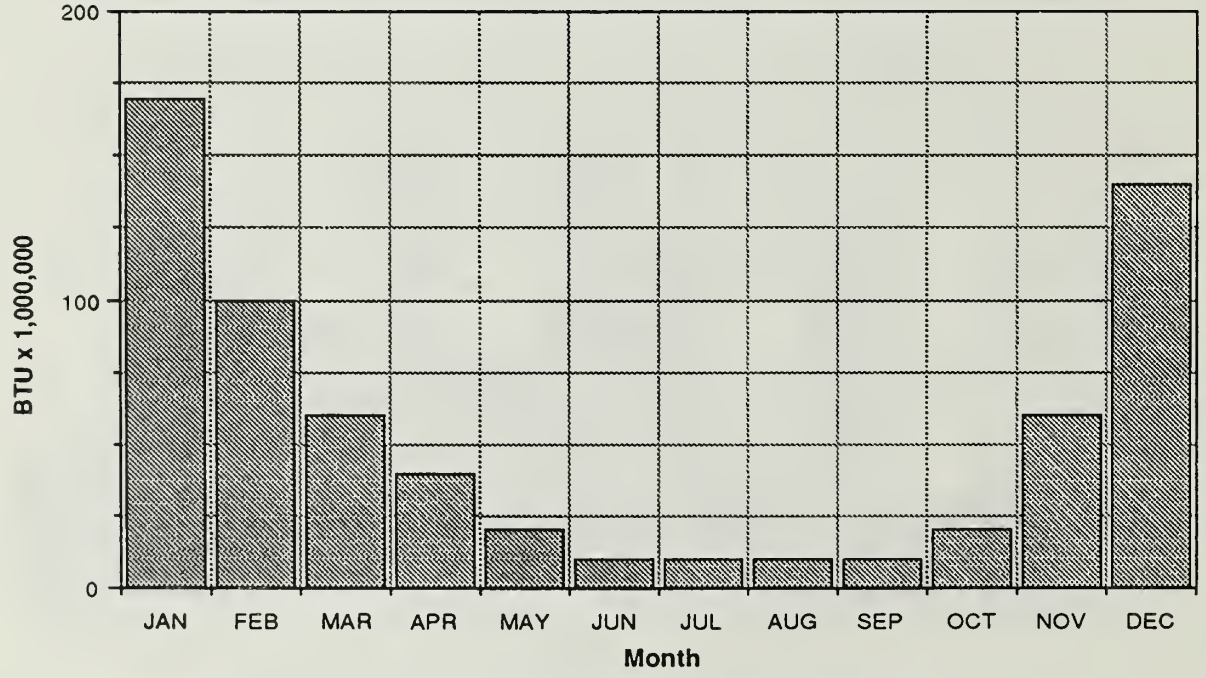
SOURCE: Flack & Kurtz; and ESA

300 Howard Street ■

Figure 3
Estimated Electricity-Peak Day
Demand and Annual Consumption



PEAK DAY NATURAL GAS LOAD DISTRIBUTION (JANUARY)



ANNUAL NATURAL GAS LOAD DISTRIBUTION

300 Howard Street ■

SOURCE: Flack & Kurtz; and ESA

Figure 4
Estimated Natural Gas Peak Day and
Annual Gas Load Distribution

TABLE 2: PROJECT-RELATED ANNUAL TRANSPORTATION ENERGY CONSUMPTION IN 2000/a/

	Electricity (Thousands of kWh)	Gasoline (Thousands of Gallons)	Diesel (Thousands of Gallons)	Total Btu (Billion)
Auto/Taxi/Jitney/Motorcycle/ Charter Bus	--	125.4	--	17.6
BART	1,070	--	--	10.9
Muni Electric	690	--	--	7.4
Regional Bus Systems	--	--	15.1	2.4
SPRR	--	--	6.5	1.0
Project Total	1,760	125.4	21.6	39.0

/a/ The methods used to calculate these figures are described in detail in the Downtown Plan EIR, EE81.8, certified November 18, 1984, in Appendix N. The associated data is contained in Table 6 of that document. Calculations are also based, in part, on vehicle miles travelled (see calculations for the project on file at the Department of City Planning, Office of Environmental Review, 450 McAllister St.).

SOURCE: Environmental Science Associates, Inc.

NOTES - Energy/Natural Resources

/1/ Existing energy consumption on the project site was estimated from average PG&E restaurant energy consumption factors for 1990.

/2/ The British thermal unit (Btu) is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level; all references to Btu in this Initial Study are at-sources values. The term "at-source" means that adjustments have been made in the calculation of the thermal energy equivalent (Btu) for losses in energy that occur during generation, transmission, and distribution of the various energy forms as specified in: ERCDC, 1977, Energy Conservation Design Manual for New Non-Residential Buildings, Energy Conservation and Development Commission, Sacramento, California, and Apostolos, J.A., W.R. Shoemaker, and E. C. Shirley, 1978 Energy and Transportation System, California Department of Transportation, Sacramento, California, Project #20-7, Task 8.

/3/ Hannon, B., et al., 1978, "Energy and Labor in the Construction Sector," Science 202:837-847.

/4/ Brock, Kelly, Dispatcher for PG&E, telephone conversation, January 29, 1990.

/5/ Grimm, Robert, Assistant Chief Gas Dispatcher for PG&E, telephone conversation, January 30, 1990.

12) Hazards. Could the project:	Yes	No	Discussed
*(a) Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	X
*(b) Interfere with emergency response plans or emergency evacuation plans?	___	X	X
(c) Create a potentially substantial fire hazard?	___	X	X

The project would not create a potential public health hazard through the production or disposal of harmful materials.

The project would increase the daytime population in downtown San Francisco. Employees in the proposed building would contribute to congestion if an emergency evacuation of the downtown area were required. This issue and any appropriate mitigation measures will be addressed in the EIR.

The increased number of persons using the site would not substantially increase the fire hazard at the site as the project would be required to conform to the Life Safety provisions of the San Francisco Building Code and Title 24 of the California Code of Regulations. The project would replace one building and upgrade one building built prior to these code requirements.

A discussion of the potential for encountering toxic materials at the project site including asbestos during building rehabilitation, subsurface toxins during excavation, and the project's relation to Ordinance No. 253-86 (the Maher Ordinance) will be included in the EIR.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

13) Cultural. Could the project:	Yes	No	Discussed
*(a) Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historical or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	X	__	X
(b) Conflict with established recreational, educational, religious or scientific uses of the area?	__	X	X
(c) Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?	__	X	X

Archival research was conducted regarding the possibility of encountering artifacts on the project site./1/ The history of the Howard Street project site is one of continuous development and intensive use since at least the early 1860's. The subject property was located in close proximity to both Happy Valley and Rincon Hill, two of the earliest centers of settlement south of Market Street. From the early 1860's onward, the project area and its immediate surroundings played an important role in the South of Market area's mid-to-late 19th century industrial boom.

According to an 1843 sketch map and the 1852 U.S. Coast and Geodetic Survey map of San Francisco, the original San Francisco Bay shoreline was approximately one block to the west of the eastern edge of the proposed Howard Street project site, along the line of what today is First Street. The entire project area lay submerged beneath the waters of the bay, at an approximate depth of between three and five feet, near the southern periphery of a sheltered anchorage known as Yerba Buena Cove. In its natural state, immediately prior to the start of the Gold Rush in 1849, the shoreline of Yerba Buena Cove consisted of a rather narrow, semicircular strip of level ground, sloping gently upward toward the west. The flat area was surrounded on all three landward sides by large sand hills.

Because the project site was submerged beneath the waters of Yerba Buena Cove during the Prehistoric, Spanish, Mexican and Early American periods (ca. 6000 B.C. - A.D. 1848), it appears unlikely that cultural resources associated with the pre-Gold Rush occupation of San Francisco would be encountered within the confines of the present subject property.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The only exception, would be the remote possibility of discovering a submerged Native American shellmound or lost or discarded items from vessels using the Cove during the Spanish, Mexican, and Early American periods.

The present project area lay to the south of the center of Gold Rush San Francisco, therefore the urban development of the city during this period had no direct impact on the proposed Howard Street project site. The documented history of the project area begins in about 1850 or 1851, when a gas works was constructed immediately to the west of the project site, within the block bounded by Mission, Fremont, Howard, and First Streets. For a period of up to ten years, the project site was inundated with the waste products of the gas works, to the degree that the property and its immediate surroundings acquired the name "Tar Flat."

Although unlikely, the possibility exists of discovering Gold Rush era maritime remains within the proposed project site. A number of 19th century wooden sailing ship hulks are buried in landfill beneath the Financial District and South of Market area. These vessels were originally used as storeships or for housing, and when they were no longer useful, they were used as part of the fill along San Francisco's waterfront.

The filling of Yerba Buena Cove had been occurring since the early 1850's. The amount of filling necessary for a given piece of property was based on the need to bring it to the level of the official city grade. Fill consisted mostly of dune sand, building rubble, abandoned ships, and other refuse. Sometime in the early-to-mid 1860s the proposed Howard Street site was filled, although the property remained in service to the gas works as a coal storage area. The remaining portion of the block, immediately adjacent to the present project site, became home to a variety of foundry operations, including the Vulcan Iron Works.

The character of the project site remained essentially unchanged until the Earthquake and Fire of 1906. Following this calamity, the nature of the site and surrounding blocks was permanently changed, as most of the heavy industry in the South of Market area relocated to the environs of Potrero Hill. The proposed Howard Street project site became home to a variety of facilities for light industry and storage.

A 1913 Sanborn Insurance Company map of San Francisco, updated to 1929, shows the site occupied by several one to three story buildings of various types of construction. At the northwest corner of Howard and Beale Streets, a single story building made of iron was

used as storage, while another single story brick building immediately to the west, fronting onto Howard Street between Beale and Howard, is labeled "Auto Sales and Service." Adjacent to the west, at the northeast corner of Fremont and Howard Streets, a three story brick building labeled "Elec. Repair Shop/Printing and Bookbinding" is shown. This is probably the same Category III Historic structure which stands on the site today, and is scheduled to be rehabilitated and incorporated into the proposed Howard Street project. Immediately to the north of this building, fronting onto Fremont Street, was a two story structure of reinforced concrete labeled "storage." Opposite this building to the east, fronting onto Beale, was a "Coke and Brick Yard." This yard adjoined the corrugated iron structure, already discussed above, at the corner of Beale and Howard Streets. The remaining northern portion of the block bounded by Mission, Beale, Howard and Fremont Streets contained several warehouse facilities for dry goods, paint and glass. Today, most of the site is vacant and used for surface parking except for the Marine Electric Company Building and the 193 Fremont Street building.

Based on the findings of archival research, there is a minimal likelihood that significant, or potentially significant cultural resources from the mid-19th through early 20th century periods lie buried within the confines of the project area. An exception concerns the possible presence of buried maritime resources. A number of Gold Rush hulks are known to exist at various locations within the South of Market area. Given the above findings, the archaeological consultant recommends that no pre-construction archaeological testing procedures are necessary with regard to the present subject parcel. As a precautionary measure, however, it is recommended that a program of on-site archaeological monitoring be conducted within the confines of the proposed Howard Street project during the course of subsurface construction excavation (see mitigation measures, pp. 26-27).

The potential for encountering subsurface cultural materials on the site requires no further analysis and will not be discussed in the EIR. Architectural resources, including a discussion of the existing on-site historic structure, will be included in the Urban Design section of the EIR.

NOTE - Cultural

/1/ An archaeological resources report titled Archival Cultural Resources Evaluation of the Proposed Howard Street Development Project, San Francisco, California was prepared for the proposed site by Allen G. Pastron, Ph.D., of Archeo-Tec, February 1990, and is on file at the Office of Environmental Review, Department of City Planning, 450 McAllister Street, San Francisco.

C. OTHER	Yes	No	Discussed
Require approval and/or permits from City Departments other than Department of City Planning or Bureau of Building Inspection, or from Regional, State, or Federal Agencies?	___	X	___

D. MITIGATION MEASURES	Yes	No	N/A	Discussed
1) If any significant effects have been identified, are there ways to mitigate them?	___	___	___	X
2) Are all mitigation measures identified above included in the project?	X	___	___	X

The following are mitigation measures related to topics determined to require no further analysis in the EIR. The EIR will contain a mitigation chapter describing these measures and also including other measures which would be, or could be, adopted to reduce potential adverse effects of the project identified in the EIR.

Operational Noise

- As recommended by the Environmental Protection Element of the San Francisco Master Plan, an analysis of noise reduction measures would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features could include fixed windows and climate control.

Construction Air Quality

- The project sponsor would require the contractor to sprinkle demolition sites with water continuously during demolition activity; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling of motors

when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

Geology/Topography/Hydrology

- A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by a California-licensed geologic engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project.

- If the project were to include dewatering, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.

- The project sponsor would require the general contractor to install and maintain sediment traps in local stormwater intakes during the construction period to reduce the amount of sediment entering the storm drain/sewer lines, if this is found necessary by the Industrial Waste Division of the Department of Public Works.

Water Quality

- See the second and third measures under Geology/Topography/Hydrology, above, for mitigation proposed to prevent sediment from entering storm sewers.

Cultural

- The sponsor would retain the services of an archaeologist. The Environmental Review Officer (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

Given the archival history of the project site, an historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO would also require cooperation of the project sponsor in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

- Should archaeological resources be found following commencement of excavation activities, the archaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific mitigation measures, if necessary. Excavation or construction activities which might damage the discovered cultural resources would be suspended for a maximum of four weeks (cumulatively for all instances where the ERO has required a delay in excavation or construction) to permit inspection, recommendation and retrieval, if appropriate.

- Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed in an appropriate repository as determined by the ERO. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University along with three copies to the ERO.

E. ALTERNATIVES

Alternatives to the proposed project would include the following:

A. No Project: The site would remain in its existing condition with all buildings remaining.

B. 6:1 FAR: The site would be developed with a FAR of 6:1, the maximum base FAR without the use of TDR.

C. 2/3 Size Project: The site would be developed with a building approximately 2/3 the size of the proposed project.

D. 18:1 FAR: The site would be developed with a FAR of 18:1, the maximum allowed with the use of TDR.

These alternatives and their potential impacts will be discussed in the EIR.

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plants or animal, or eliminate important examples of the major periods of California history or pre-history?	___	X	___
*2) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3) Does the project have possible environmental effects which are individually limited, but cumulatively considerable. (Analyze in the light of past projects, other current projects, and probable future projects.)	X	___	X
*4) Would the project cause substantial adverse affects on human beings, either directly or indirectly?	___	X	___

The project would contribute to cumulative impacts of downtown development, primarily in the areas of transportation and air quality. Applicable cumulative impacts will be discussed in the EIR.

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*Derived from State EIR Guidelines, Appendix G, normally significant effect.

G. ON THE BASIS OF THIS INITIAL STUDY

____ I find that proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigations measures, numbers ____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

__X__ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Barbara W. Sahm

BARBARA W. SAHM
Environmental Review Officer
for

DEAN L. MACRIS
Director of Planning

DATE: 7/9/90

APPENDIX B: ARCHITECTURAL RESOURCES

The architectural ratings discussed in the text of this report represent the results of three separate architectural evaluation surveys: the 1976 San Francisco Department of City Planning Citywide Architectural Survey, the Heritage Survey, and the Downtown Plan survey. These are discussed below.

SAN FRANCISCO DEPARTMENT OF CITY PLANNING CITYWIDE ARCHITECTURAL SURVEY

Between 1974 and 1976, the San Francisco Department of City Planning conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians assisted in the final determination of ratings for the 10,000 buildings, the results of which were entered in an unpublished 60-volume record of the inventory. The rated buildings are also represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The inventory and maps are on file at the Department of City Planning.

The inventory assessed the architectural significance of the surveyed structures from the standpoint of overall design and particular design features. Both contemporary and older buildings were included, but historical associations were not considered. Each building was given two numerical ratings, one for architectural quality and one for overall architectural significance, urban design context, and environment significance. The latter rating is referred to in this report. The ratings ranged from a low of "0" to a high of "5." The architectural survey resulted in a listing of the best ten percent of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or higher represent approximately the best two percent of the City's architecture.

HERITAGE SURVEY

The Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an architectural and historical survey of all downtown structures. In 1979, the original inventory results were published in the book *Splendid Survivors* (Foundation for San Francisco's Architectural Heritage, *Splendid Survivors*, California Living Books, San Francisco 1979). A subsequent 1982 Heritage survey evaluated all structures in the C-3 zoning districts in areas not covered in the *Splendid Survivors* survey ("San Francisco

Downtown Architectural Survey: C-3 Zoning District, Final Evaluated List," December 1, 1982). The expanded inventory has not been formally published by Heritage. Criteria considered in rating the buildings for both surveys include Architectural Significance, Historic Context and Negative Alterations. Summary ratings from "A" to "D" were assigned to each building on the basis of these scores. The summary ratings, as described on pp. 12-13 of *Splendid Survivors*, are listed below:

A. Highest Importance. Individually the most important buildings in downtown San Francisco, distinguished by outstanding qualities of architecture, historical values, and relationship to the environment. All A-group buildings are eligible for the National Register, and of highest priority for City Landmark status.

B. Major Importance. Buildings which are of individual importance by virtue of architectural, historical, and environmental criteria. These buildings tend to stand out for their overall quality rather than for any particular outstanding characteristics. B-group buildings are eligible for the National Register, and of secondary priority for City Landmark status.

The Landmarks Preservation Advisory Board does not distinguish between "A" rated and "B" rated buildings for purposes of preservation.

C. Contextual Importance. Buildings which are distinguished by their scale, materials, compositional treatment, cornice and other features. They provide the setting for more important buildings and they add visual richness and character to the downtown area. Many C-group buildings may be eligible for the National Register as part of historic districts.

D. Minor or No Importance. Buildings which are insignificant examples of architecture by virtue of original design, or more frequently, insensitive remodeling. This category includes vacant buildings and parking lots. Most D-group buildings are sites of opportunity.

Not Rated. Buildings which have been built or suffered insensitive exterior remodelings since 1945.

DOWNTOWN PLAN SURVEY

The City Planning Commission adopted by Resolution No. 8600 (May 29, 1980), a "List of Architecturally and/or Historically Significant Buildings in the Downtown," based on the above described surveys. Generally, buildings rated "3" or higher in the DCP survey or "A" or "B" in the original Heritage survey (*Splendid Survivors*) were placed on the list. The expanded Heritage survey (1982) has not been adopted by the City Planning Commission to date.

The purpose of the list is to advise developers and building owners of the importance the City places upon the buildings' conservation and to require special review by the Commission of any plans which would affect any building or buildings on the list. Resolution No. 9240

(November 19, 1981) reaffirms the Commission's concern for preservation of architecturally significant buildings and acknowledges the Director's intent to recommend denial of projects that propose to demolish significant buildings.

The Downtown Plan establishes four categories of architecturally important structures. The Plan states (p. 66) "This Plan proposes a preservation strategy that would require that 268 buildings (called significant buildings in this Plan) be retained, while providing incentives to encourage the retention of 183 other important, but less significant buildings (called contributory buildings.) They are shown on Map 12 in the Plan. Both classes of buildings would be entitled to 'Transferable Development Rights.'" The following material, taken from the Plan, describes the categories and briefly identifies preservation strategies.

Significant Buildings

Those buildings of the highest architectural and environmental importance -- buildings whose demolition would constitute an irreplaceable loss to the quality and character of downtown -- would be required to be retained. There are 268 of these buildings. They include all buildings rated by Heritage as excellent in either architectural quality or relationship to the environment, or very good in both. (This covers all buildings rated "A" by Heritage and most of the buildings rated "B".)

These buildings -- referred to in the Plan as significant buildings -- are divided into Category I and Category II, the difference being in the extent of alteration allowed. There are 226 significant buildings in Category I ([listed]) in Table 4 [of the Plan] and 42 significant buildings in Category II.

Contributory Buildings

The Downtown Plan proposes to encourage, but not require, retention of other buildings contributing to the quality and character of downtown. These buildings, called contributory buildings, consist of two groups:

Category III

- Buildings rated very good in architectural quality, but lower than very good in relationship to the environment, or vice versa, and located outside conservation districts. (These buildings were rated "B" by Heritage.) There are 21 of these buildings. They are listed on Table 6 [of the Plan].

Category IV

- Buildings rated very good in architectural quality, but lower than very good in relationship to the environment or vice versa and which are located in a Conservation District. (These buildings were rated "B" by Heritage.) There are 15 of them.

- Buildings with "contextual value" to a conservation district. These contextual buildings are buildings that themselves are not highly rated in architectural quality and relationship to the environment, but do make a substantial contribution to the "quality" of an area that contains a number of highly-rated buildings and that is proposed to be given special protection as a conservation district. (These buildings were rated "C" by Heritage.) The 166 Category IV buildings are listed in Table 7 [of the Plan.]

Six conservation districts are established by the Plan:

District 1: Kearny-Market-Mason-Sutter Conservation District

District 2: New Montgomery-Second Street Conservation District

District 3: Commercial-Leidesdorff Conservation District

District 4: Front-California Conservation District

District 5: Kearny-Belden Conservation District

District 6: Pine-Sansome Conservation District

The Downtown Plan does not allow transfer of development rights to parcels when such transfer would result in the substantial alteration or demolition of a Significant or Contributory Building.

APPENDIX C: WIND STUDY METHODOLOGY

This summary of wind study methodology is based on a study by Bruce R. White, Ph.D., Professor of Mechanical Engineering at the University of California, Davis. The study is independent of the University. The report is available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street

INTRODUCTION

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to four mph have no noticeable effect on pedestrian comfort. With winds from four to eight mph, wind is felt on the face. Winds from eight to thirteen mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. For winds from 19 to 26 mph, the force of the wind will be felt on the body. At 26 to 34 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over.

Wind tunnel tests were conducted for winds in the project vicinity in its existing condition, (including all approved development) and with the project in both the existing scenario and the potential development context, all in relation to the Downtown Plan wind performance criteria (adopted by the City Planning Commission, November 29, 1984). Wind tunnel measurements and existing weather records for San Francisco were used to predict equivalent mean wind speeds near the project site./1/ These mean wind speeds were compared to comfort criteria of 11 mph for pedestrian areas and seven mph for sitting areas, each not to be exceeded more than ten percent of the time. Separate calculations were also done to evaluate compliance with the hazard criteria that hourly average wind speeds may not reach or exceed 26 mph for one hour per year.

A one inch = 50 feet scale model of the downtown San Francisco area surrounding the proposed building for several blocks in all directions was provided by ESA. The model tested four configurations: existing; project plus existing; a 5.0:1 FAR alternative plus existing; and a 9.7:1 FAR alternative plus existing.

The model was tested in a wind tunnel that allows testing of natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 feet), a test section of 1.22 m (4 feet) wide by 1.83 m (6 feet) high, and an adjustable false ceiling. The adjustable ceiling and turbulence generators allow speeds within the tunnel to vary from one to eight meters per second(m/s) or 2.2 to 17.9 miles per hour (mph).

The wind tunnel study was divided into two parts: flow visualization and wind speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations. The subsequent motion of the smoke was recorded, and prevailing wind directions were determined.

Wind-speed measurements were made with a hot-wire anemometer, an instrument that directly related rates of heat transfer to wind speeds by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (changes in wind speeds over short periods of time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of plus or minus (±) five percent of the true values. The ratio of near-surface speed to reference wind speed was calculated from the hot-wire measurements.

Twenty-three test locations were studied for four prevailing wind directions (northwesterly, west-northwesterly, west-southwesterly and westerly) for the four configurations. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building site for the four wind directions and the four cases.

METHODOLOGY AND ASSUMPTIONS

The wind ordinance associated with the Downtown Plan (Section 148) is defined in terms of equivalent wind speed. This term denotes an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence.

The mean wind speeds at street level were determined by a wind tunnel test and a comparison of the test results with statistically representative records of wind data collected atop the Old Federal Building. Data describing the speed, direction and frequency of occurrence of winds were gathered at the old San Francisco Federal Building, at 50 United Nations Plaza, during the

six-year period 1945 to 1950. Measurements taken hourly and averaged over one-minute periods have been tabulated for each month (averaged over the six years) in three-hour periods using seven classes of wind speed and 16 compass directions. Analysis of these data shows that during the hours from 6:00 a.m. to 8:00 p.m., about 62 percent of the winds blow from three of the 16 directions, as follows: Northwest (NW), 10 percent; West Northwest (WNW), 14 percent; West Southwest (WSW), 2 percent; West (W), 35 percent; and, all other winds, 36 percent. Calm conditions occur two percent of the time.

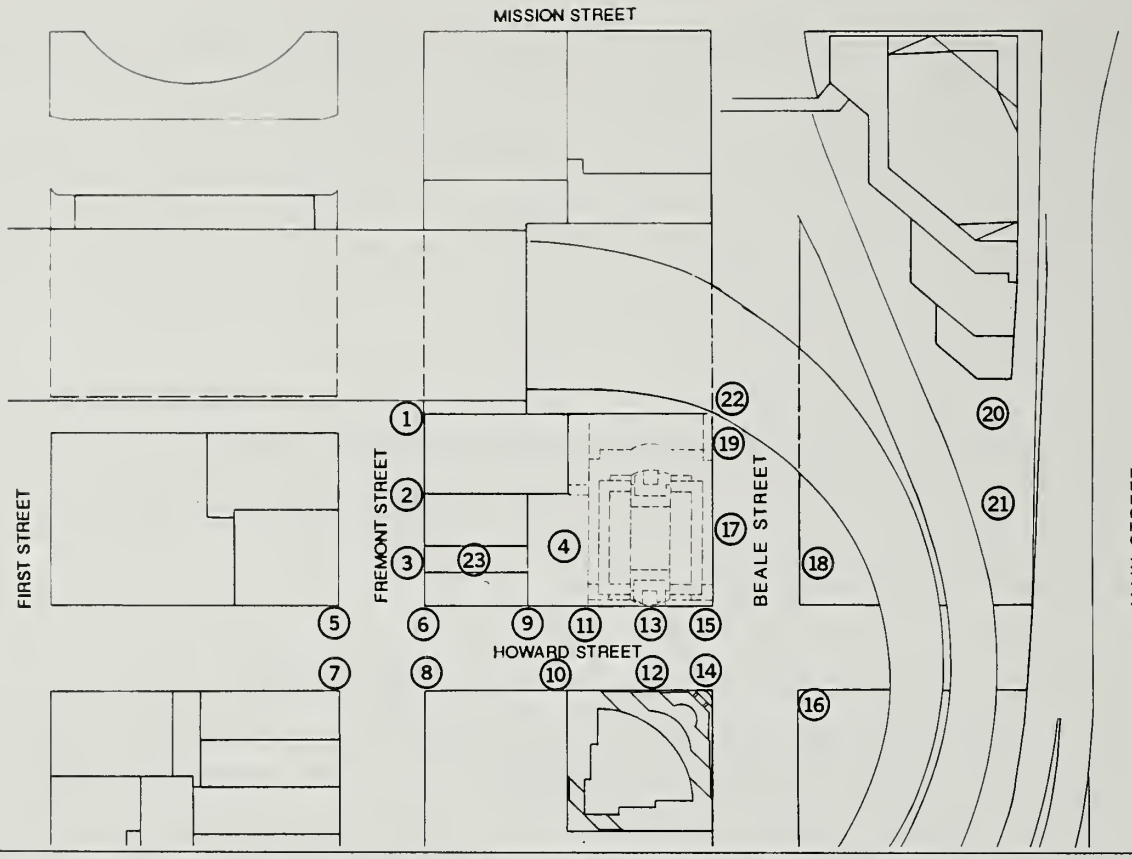
Each wind tunnel measurement results in a ratio that relates the speed of ground-level wind to the speed at the reference elevation, in this case the height of the old San Francisco Federal Building. The wind that is measured is an equivalent wind-speed value which is adjusted to include the level of gustiness or turbulence present.

The frequency with which a particular wind velocity is exceeded at any test location is then calculated by using the measured wind tunnel ratios and a specified ground speed to determine the corresponding reference wind speed for each direction. In general, this gives different reference speeds for each direction (NW, WNW, WSW, W, and Other). The wind data for San Francisco are then used to calculate the percentage of the time each reference speed would be exceeded. The sum of these is the total percentage of time that the specified ground-level wind speed is exceeded. A computer is used to calculate the total percentages for a series of wind speeds until the speed exceeded ten percent of the time is found. Throughout the following discussion, the wind speeds reported refer to the equivalent wind speeds that would be exceeded ten percent of the time. This is the time period specified for evaluation of the comfort criteria in the Downtown Plan.

The hazard criterion in the Downtown Plan states that the hourly average wind speed may not reach or exceed 26 mph for one hour per year. The wind data observed at the old San Francisco Federal Building are not full hour average speeds as required by the code, so it is necessary to adjust the equivalent wind speeds to obtain the true hourly average of 26 mph./2/ The adjusted equivalent wind speeds were used to calculate compliance with the hazard criterion.

STUDY RESULTS

The locations of the measurement points and the result of the wind tunnel study for compliance with the comfort criteria are summarized in Figure C-1.



For each configuration, the wind speed, in mph, exceeded at pedestrian level for ten percent of the time is shown. At each measurement location, the comfort criterion speed established in Section 148 of the City Planning Code is 11 mph, except for seating areas (location 4 under the project and Alternatives B and D) where the comfort criterion speed is seven mph.

LOCATION	EXISTING	PROJECT	ALTERNATIVE B	ALTERNATIVE C
	10% Exc. Speed (mph)	10% Exc. Speed (mph)	10% Exc. Speed (mph)	10% Exc. Speed (mph)
1	5	3	4	4
2	4	3	4	3
3	4	5	3	4
4	6	3	4	3
5	6	5	5	5
6	6	5	6	5
7	5	5	5	5
8	5	4	4	4
9	6	3	5	4
10	7	7	7	7
11	6	10	7	10
12	8	8	7	8
13	7	7	7	7
14	11	9	9	9
15	8	7	6	7
16	11	10	9	9
17	6	4	4	5
18	5	4	4	4
19	4	5	5	5
20	4	4	4	4
21	3	4	3	4
22	6	8	7	8
23	--	5	4	5

SOURCE: Environmental Science Associates, Inc.; Bruce White, Ph.D.

300 Howard Street ■

Figure C-1
Locations of Wind Speed Measurements

Wind speeds in the existing setting are from 3 to 11 mph. In the existing setting there are no violations of the 11 mph pedestrian comfort criterion. The comfort criterion for seating areas does not apply as there are no seating areas in the project vicinity.

The project would cause wind speeds to increase at 5 of 23 test locations, to remain the same at 5 locations, and to decrease at 12 locations. One location (location 23 on Figure C-1) was not tested for the existing setting because this location was within the Fremont House building which was not yet demolished at the time the wind study was conducted. Winds would not exceed the 11 mph comfort criterion for pedestrian areas at any of the locations tested. At the one test location within sitting areas created by the project (location 4), winds would satisfy the seven mph comfort criterion.

NOTES - Wind Study Methodology

/1/ Equivalent mean wind speed is defined as the mean wind, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45.

/2/ Arens, E., "Designing for Acceptable Wind Environment," Transactions Engineering Journal, ASCE 107, No. TE2, p. 127-141, 1981.

APPENDIX D: TRANSPORTATION

TABLE D-1: PASSENGER LEVELS OF SERVICE ON BUS TRANSIT

Level of Service	Description	Passengers per Seat
A	Level of Service A describes a condition of excellent passenger comfort. Passenger loadings are low with fewer than half the seats filled. There is little or no restriction on passenger maneuverability. Passenger loading times do not affect scheduled operation.	0.00-0.50
B	Level of Service B is in the range of passenger comfort with moderate passenger loadings. Passengers still have reasonable freedom of movement on the transit vehicle. Passenger loading times do not affect scheduled operations.	0.51-0.75
C	Level of Service C is still in the zone of passenger comfort, but loadings approach seated capacity and passenger maneuverability on the transit vehicle is beginning to be restricted. Relatively satisfactory operating schedules are still obtained as passenger loading times are not excessive.	0.76-1.00
D	Level of Service D approaches uncomfortable passenger conditions with tolerable numbers of standees. Passengers have restricted freedom to move about on the transit vehicle. Conditions can be tolerated for short periods of time. Passenger loadings begin to affect schedule adherence, as the restricted freedom of movement for passengers requires longer loading times.	1.01-1.25
E	Level of Service E passenger loadings approach manufacturers' recommended maximums and passenger comfort is at low levels. Freedom to move about is substantially diminished. Passenger loading times increase as mobility of passengers on the transit vehicle decreases. Scheduled operation is difficult to maintain at this level. Bunching of buses tends to occur, which can rapidly cause operations to deteriorate.	1.26-1.50
F	Level of Service F describes crush loadings. Passenger comfort and maneuverability are extremely poor. Crush loadings lead to deterioration of scheduled operations through substantially increased loading times.	1.51-1.60

SOURCE: Environmental Science Associates, Inc. from information in the *Interim Materials on Highway Capacity*, Transportation Research Circular 212, pp. 73-113, Transportation Research Board, 1980.

INBOUND **N-JUDAH** – Duboce and Church
8:30 a.m., Wednesday, March 21, 1990

OUTBOUND **N-JUDAH** – Van Ness Station
5:30 p.m., Tuesday, March 20, 1990

INBOUND **38L-GEARY** – Van Ness and O'Farrell
8:35 a.m., Thursday, March 22, 1990

OUTBOUND **L-TARAVAL** – Van Ness Station
5:25 p.m., Tuesday, March 20, 1990

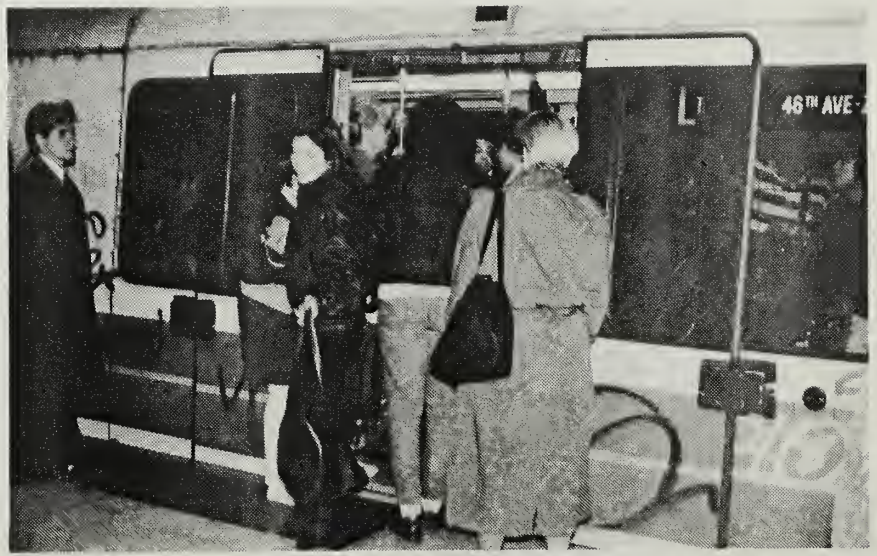
SOURCE: Environmental Science Associates, Inc.

Figure D-1
Photos of Muni Peak Loading Conditions

INBOUND **M-OCEANVIEW** – Civic Center Station
7:45 a.m., Thursday, March 29, 1990

OUTBOUND **J-CHURCH** – Van Ness Station
5:20 p.m., Thursday, March 29, 1990

INBOUND **K-INGLESIDE** – Civic Center Station
7:55 a.m., Thursday, March 29, 1990



OUTBOUND **L-TARAVAL** – Van Ness Station
5:45 p.m., Thursday, March 29, 1990

300 Howard Street ■

SOURCE: Environmental Science Associates, Inc.

Figure D-1 (continued)
Photos of Muni Peak Loading Conditions

INBOUND **14-MISSION** – Mission and 24th Streets
7:35 a.m., Thursday, March 29, 1990

INBOUND **38L-GEARY** – O'Farrell and Van Ness
8:35 a.m., Thursday, March 29, 1990

SOURCE: Environmental Science Associates, Inc.

Figure D-1 (continued)
Photos of Muni Peak Loading Conditions

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made used the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, *Traffic Engineering*. This method is also explained in "Interim Materials on Highway Capacity", *Transportation Research Circular No. 212*, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-2). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio calculated by dividing the existing volume by the capacity at Level of Service E.

PEDESTRIAN ANALYSIS

The pedestrian analysis has been conducted following methods developed by Pushkarev and Zupan in *Urban Space for Pedestrians* (MIT Press, 1975). Table D-4 shows the relationship between pedestrian flow rates and the flow regimes (categories) used to describe levels of operation. Figure D-2 shows photographs of pedestrian conditions that correspond to the flow regimes.

TABLE D-2: VEHICULAR LEVELS OF SERVICE AT SIGNALIZED INTERSECTIONS

Level of Service	Description	Volume/Capacity (v/c) Ratio/a/
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	less than 0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.01+

/a/ Capacity is defined as Level of Service E.

SOURCE: Environmental Science Associates, Inc. from *Transportation Research Circular No. 212*, Transportation Research Board, 1980.

TABLE D-3: TRAFFIC LEVELS OF SERVICE FOR FREEWAYS

Level of Service	Description	Volume/Capacity (v/c) Ratio/a/
A	Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	0.00-0.60
B	Level of Service B is in the higher speed range of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted.	0.61-0.70
C	Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained.	0.71-0.80
D	Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
E	Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds (typicallyabout 30 to 35 mph) than in Level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.91-1.00
F	Level of Service F describes forced flow operation at low speeds (less than 30 mph), in which the freeway acts as storage for queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In the extreme, both speed and volume can drop to zero.	1.01+

/a/ Capacity is defined as Level of Service E.

SOURCE: Environmental Science Associates, Inc. from information in the *Highway Capacity Manual*, Special Report 87, Highway Research Board, 1965.

TABLE D-4: PEDESTRIAN FLOW REGIMEN

Flow Regime/a/	Choice	Conflicts	Flow Rate (p/f/m)/b/
Open	Free Selection	None	less than 0.5
Unimpeded	Some Selection	Minor	0.5 to 2.0
Impeded	Some Selection	High Indirect Interaction	2.1 to 6.0
Constrained	Some Restriction	Multiple	6.1 to 10.0
Crowded	Restricted	High Probability	10.1 to 14.0
	Design Limit - Upper Limit of Desirable Flow		
Congested	All Reduced	Frequent	14.1 to 18.0
Jammed	Shuffle Only	Unavoidable	Not applicable/c/

/a/ Photographs of these conditions are shown in Figure D-2.
/b/ P/F/M = Pedestrians per foot of effective sidewalk width per minute.
/c/ For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: *Urban Space for Pedestrians*, MIT Press, 1975, Cambridge, MA.

JAMMED FLOW. Space per pedestrian in this view is about 3.8 sq ft (0.35 m^2). This is representative of the lower half of the speed-flow curve, where only shuffling movement is possible and even the extremely uncomfortable maximum flow rate of 25 people per min per ft (82 per m) of walkway width cannot be attained due to lack of space. Photograph by Louis B. Schlivek.

The threshold of CONGESTED FLOW. The first eleven people in the view have about 16 sq ft (1.5 m^2) per person, corresponding to a flow rate of about 15 people per min per ft (49 per m) of walkway width. The beginnings of congestion are evident in bodily conflicts affecting at least three of the walkers, and in blocked opportunities for walking at a normal pace.

The onset of CROWDED FLOW, with an average of about 24 sq ft (2.2 m^2) per person, or a flow rate of about 10 people per min per ft (33 per m) of walkway width. Choice of speed is partially restricted, the probability of conflicts is fairly high, passing is difficult. Voluntary groups of two, of which two can be seen in the picture, are maintained, but cause interference. Note also some overflow into the vehicular roadway in the background.

The midpoint of the CONSTRAINED FLOW range, with about 30 sq ft (2.8 m^2) per person, or a flow rate of about 8 people per min per ft (26 per m) of walkway width. The choice of speed is occasionally restricted, crossing and passing movements are possible, but with interference and with the likelihood of conflicts. The man in the dark suit seems to be able to cross in front of the two women in the foreground quite freely, but in the background near the curb people are having difficulty with passing maneuvers.

SOURCE: Pushkarev and Zupan

300 Howard Street ■

Figure D-2
Photos of Pedestrian Flow Levels

The borderline between IMPEDED and UNIMPEDED FLOW, with about 130 sq ft (12 m^2) per person, or a flow rate of about 2 people per min per ft (6.5 per m) of walkway width. Individuals as well as couples visible in this view have a choice of speed and direction of movement. This rate of flow is recommended for design of outdoor walkways in office districts and other less dense parts of downtown areas.

The uneven nature of UNIMPEDED FLOW. While the people walking in the plaza—which is 17 ft (5.2 m) wide, compared to 23 ft (7 m) in the preceding picture have almost 130 sq ft (12 m^2) per person on the average, the space allocation for the eight individuals in the foreground is closer to 70 sq ft (6.4 m^2). Thus, indirect interaction with others is still quite frequent in the upper range of UNIMPEDED FLOW.

The midpoint of the IMPEDED FLOW range, with about 75 sq ft (6.9 m^2) per person, or a flow rate of about 4 people per min per ft (13 per m) of walkway width. Physical conflicts are absent, but pedestrian navigation does require constant indirect interaction with others. This rate of flow is recommended as an upper limit for the design of outdoor walkways in shopping districts and other dense parts of downtown areas.

Lower range of UNIMPEDED movement, approaching OPEN FLOW. About 350 sq ft (32.2 m^2) per person, or a flow rate of less than 1 person per min per ft (3.3 per m) of walkway width. Complete freedom to select the speed and direction of movement; individuals behave quite independently of each other. For a design standard based solely on pedestrian density, this amount of space can be considered excessive.

SOURCE: Pushdarev and Zupan

300 Howard Street ■

Figure D-2 (continued)
Photos of Pedestrian Flow Levels

TABLE D-5: PARKING DEMAND CALCULATIONS

PARKING METHODOLOGY

Long Term Parking Demand:

$$\frac{\text{Office Space gsf}}{20{,}000} + \frac{\text{(Office Space GSF x 0.11)}}{275\text{GSF/employee}} + \frac{\text{(Retail GSF}}{350\text{ GSF/employee}} \times 0.15) = \text{Long Term Parking Demand}$$

Short Term Parking Demand:

$$\frac{\text{Office Space gsf}}{20{,}000} + \frac{\text{Retail GSF}}{1{,}000} = \text{Short Term Parking Demand}$$

Total Parking Demand:

Long Term Parking Demand + Short Term Parking Demand = Total Parking Demand

PROJECT

Project Long Term Parking Demand

$$\frac{410{,}600}{20{,}000} + \frac{(410{,}600 \times 0.11)}{275} + \frac{(15{,}300}{350} \times 0.15) = 20.5 + 164.2 + 6.6 = 191$$

Project Short Term Parking Demand

$$\frac{410{,}600}{20{,}000} + \frac{15{,}300}{1{,}000} = 20.5 + 15.3 = 36$$

Total Project Parking Demand

191 +36 = 227

ALTERNATIVE B

Alternative B Long Term Parking Demand

$$\frac{159{,}320}{20{,}000} + \frac{(159{,}320 \times 0.11)}{275} + \frac{(15{,}300}{350} \times 0.15) = 8.0 + 63.7 + 6.6 = 78$$

Alternative B Short Term Parking Demand

$$\frac{159{,}320}{20{,}000} + \frac{15{,}300}{1{,}000} = 8.0 + 15.3 = 23$$

Total Alternative B Parking Demand

78 +23 = 101

(Continued)

TABLE D-5: PARKING DEMAND CALCULATIONS (Continued)

ALTERNATIVE C

Alternative C Long Term Parking Demand

$$\frac{306,800}{20,000} + \left(\frac{306,800}{275} \times 0.11\right) + \left(\frac{15,300}{350} \times 0.15\right) = 15.3 + 122.7 + 6.6 = 145$$

Alternative C Short Term Parking Demand

$$\frac{306,800}{20,000} + \frac{15,300}{1,000} = 15.3 + 15.3 = 31$$

Total Alternative C Parking Demand

145 +31 = 176

ALTERNATIVE D

Alternative D Long Term Parking Demand

$$\frac{410,600}{20,000} + \left(\frac{410,600}{275} \times 0.11\right) + \left(\frac{15,300}{350} \times 0.15\right) = 20.5 + 164.2 + 6.6 = 191$$

Alternative D Short Term Parking Demand

$$\frac{410,600}{20,000} + \frac{15,300}{1,000} = 20.5 + 15.3 = 36$$

Total Alternative D Parking Demand

191 +36 = 227

SOURCE: Environmental Science Associates, Inc.

APPENDIX E: AIR QUALITY

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY, 1986-1988 /a/

POLLUTANT:	STANDARD Federal/b/	STANDARD State/c/	1986	1987	1988
OZONE (O_3) (Oxidant)					
1-hour concentration, ppm					
Highest hourly average	0.12/d/	0.10	0.07	0.09	0.09
Number of violations			0	0	0
CARBON MONOXIDE (CO)					
1-hour concentration, ppm					
Highest hourly average	35	20	9.0	9.0	9.0
Number of violations			0	0	0
8-hour concentration, ppm					
Highest 8-hour average	9	9	12.6/e/	10.0/e/	12.8/e/
Number of violations			2	1	1
TOTAL SUSPENDED PARTICULATE (TSP)					
24-hour concentration, ug/m^3					
Highest 24-hour average	260	100/f/	124	136	113
Number of violations of previous standard			5	3	1
Annual concentration, ug/m^3					
Annual Geometric Mean/g/		60/f/	52	61	41
Annual excess			No	Yes	No
PARTICULATE MATTER-10 MICRON (PM_{10})					
24-hour Average (ug/m^3)	150	50			
Highest 24-hour average			--	65	117
Number of violations			--	4	5
LEAD (Pb)					
30-day concentration, mg/m^3					
Highest 30-day average		1.5	0.2	0.1	0.1
Number of violations			0	0	0
NITROGEN DIOXIDE (NO_2)					
1-hour concentration, ppm					
Highest hourly average		0.25	0.11	0.15	0.12
Number of violations	None		0	0	0

(Continued)

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1986-1988 (CONTINUED)

POLLUTANT:	STANDARD Federal/b/	STANDARD State/c/	1986	1987	1988
SULFUR DIOXIDE (SO_2)					
24-hour concentration, ppm					
Highest 24-hour average	0.14	0.05	0.010	0.010	0.013
Number of violations			0	0	0

NOTE: ppm = parts per million.
ug/m^3 = micrograms per cubic meter.
mg/M^3 = milligrams per cubic meter.

/a/ Data through September 1986 were collected at 900 23rd Street. October 1986 to present data is a consolidation of measurements taken at 900 23rd Street and 10 Arkansas Avenue.
/b/ Federal standard, not to be exceeded more than once per year, except for annual average standards, which are not to be exceeded.
/c/ State standard, not to be equaled or exceeded, except for CO standards, which are not to be exceeded.
/d/ The federal standard is in terms of Expected Annual Excesses which is based on a three-year running average.
/e/ This CO is measured at a special measurement station at Ellis Street for street level maximums, referred to as a microscale site.
/f/ The California ARB has redefined the state particulate standard to apply to "inhalable" particulates only (i.e., those which have a diameter less than or equal to ten microns). The new standards are 50 ug/m^3 for 24-hour averages and 30 ug/m^3 for the annual geometric mean.
/g/ The annual geometric mean is a single number which applies to an entire year of data. "No" indicates that TSP concentrations did not exceed $60(ug)m^3$.

SOURCE: California Air Resources Board, 1986 - 1988, *California Air Quality Data*.

APPENDIX F: HAZARDOUS MATERIALS

HAZARDOUS WASTE REGULATORY FRAMEWORK

Laws and regulations govern the management of hazardous materials and wastes at the federal, state, and local levels. The major federal and state laws and regulations are discussed below.

FEDERAL

The United States Environmental Protection Agency (EPA) is responsible for enforcing regulations at the federal level pertaining to hazardous materials and wastes. The primary federal hazardous materials and waste laws are contained in the Resource Conservation and Recovery Act of 1976 (RCRA), and in the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). These laws require that responsible parties report any known hazardous waste contamination of soil or groundwater to the EPA pursuant to applicable regulations. (State and local agencies also must be involved. In San Francisco, reporting must include the California Department of Health Services, the San Francisco Bay Area Regional Water Quality Control Board, or the San Francisco Department of Public Health, depending on specific circumstances.) Any contamination that threatens public health or the environment must be remediated by the responsible party according to certain standards set by the EPA.

Federal regulations pertaining to hazardous materials and wastes are contained in the Code of Federal Regulations (40 CFR). Statues that authorize these regulations are set forth in the United States Code. The regulations contain specific guidelines for determining whether a waste is hazardous, based on either the source of generation or the characteristics of the waste. Determination of standards for remediation of soil and groundwater contamination is performed on a case-by-case basis by the agency with lead jurisdiction. However, extensive federal guidance exists for determining acceptable levels of residual contaminants in soil and groundwater.

STATE

The EPA has delegated much of its regulatory authority to individual states whenever adequate state regulatory programs exist. The Toxic Substance Control Division of the California Department of Health Services is the agency empowered to enforce federal hazardous materials and waste regulations in California, in conjunction with the EPA.

California hazardous materials and waste laws incorporate federal standards, but in many respects are stricter. For example, the California Hazardous Waste Control Law, the state equivalent of RCRA, contains a much broader definition of hazardous materials and waste. Some substances not considered hazardous under federal law are considered hazardous under state law. The California Hazardous Substance Account Act, essentially the equivalent of CERCLA, contains a provision for designation of state funds to clean up sites where private funding is unobtainable. State hazardous materials and waste laws are contained in the California Code of Regulations (CCR), Titles 22 and 26.

Regulations implementing the California Hazardous Waste Control Law list 791 hazardous chemicals and 20 to 30 more common materials that may be hazardous; establish criteria for identifying, packaging and labeling hazardous wastes; prescribe management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Under both RCRA and the California Hazardous Waste Control Law, hazardous waste manifests must be retained by the generator for a minimum of three years. A hazardous waste manifest lists a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with the California Department of Health Services. The generator must match copies of hazardous waste manifests with receipts from the treatment / disposal / recycling facility to confirm the wastes were properly handled.

The Project Area is located within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). The RWQCB is authorized by the State Water Resources Control Board to enforce the provisions of the Porter-Cologne Water Quality Control Act of 1969, which incorporates federal water protection laws and additional state law provisions. That Act gives the RWQCB authority to require groundwater investigations when the quality of the groundwaters or surface waters of the state have been or could be threatened, and to remediate the site if necessary.

For sites requiring remediation, the level of site cleanup is determined on a case-by-case basis. The Department of Health Services, the RWQCB, or a local agency could act as the lead state agency in site investigations and remediation projects. The state determines the level and extent of required clean-up, based on the specific site conditions and surrounding land uses. State clean-up standards can be more restrictive than federal standards; both state and federal standards are used to determine clean-up levels. Clean-up standards employed by the RWQCB can be more stringent than those used by EPA or the Department of Health Services, and are

region-specific./1/ If soils containing hazardous materials, are excavated, the Bay Area Air Quality Management District may impose specific requirements on such activities to protect ambient air quality from dust or airborne contaminants.

HAZARDOUS SUBSTANCE WORKER SAFETY REQUIREMENTS

The California Occupational Safety and Health Administration (Cal/OSHA) and the Federal Occupational Safety and Health Administration (Fed/OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. Under authority of the Occupational Safety and Health Act of 1970, Fed/OSHA has adopted numerous regulations pertaining to worker safety (contained in the Code of Federal Regulations Title 29 [29 CFR -- Labor]). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling. In California, Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace (detailed in Title 8 of the California Code of Regulations [8 CCR]) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites./2/ The hazard communication program requires that Material Safety Data Sheets (MSDSs) be available to employees and that employee information and training programs be documented.

POTENTIAL SOURCES OF CONTAMINATION FROM OFF-SITE ACTIVITIES

Land can be affected by spills or contamination at adjacent properties. Numerous historic industries that were potential sources of contamination operated in the vicinity of the project. Use of hazardous materials or production of hazardous wastes on parcels adjacent to the project site could have caused contamination affecting the subject property. The most noteworthy example was the disposal of tarry gas works wastes at the project site before it was landfilled. It

is also possible that contaminants produced nearby after filling could have affected the site. The primary route of migration of contaminants from one site to another is through groundwater./3/ In the project area, groundwater is found about ten feet beneath the land surface and is assumed to flow generally to the east, toward San Francisco Bay./4/ On the basis of Dames & Moore's *Site History and Subsurface Investigation*, the potential for site contamination from neighboring land uses were generally assessed./5/

The project vicinity contained intensive industrial uses./4/ This review focuses on current and past land uses that would be most likely to have caused soil or groundwater contamination at the project site through contamination of properties immediately adjacent to the site. Properties farther away than about one-half block are less likely to have caused contamination of the site due to their greater distance. It is possible that other contamination due to identified or non-identified historic land uses exists. However, the land uses noted below, as well as the on-site uses noted above, would be representative of industries that could have caused soil or groundwater contamination in the area.

In addition to the gas works, nearby historic businesses that are potential sources of contamination include iron and other metal works, foundries, machine shops, sheet metal shops, a silk screen and print shop, an electric shop, a book binder, a paint, oil and glass works, at least one underground storage tank, and various manufacturing facilities. The *Site History and Subsurface Investigation* discussed these installations and listed typical contaminants that might be expected from each./4/ Table F-1 lists sites identified as being possible sources of soil and/or groundwater contamination in the immediate vicinity of the project. Locations of the various historic businesses and USTs are shown in Figure 13 in Chapter IV, Environmental Setting, p. 58.

SITE REMEDIATION

Soil remediation methods could include excavation and site treatment, excavation and off-site treatment or disposal, or treatment without excavation. Some methods of in-situ treatment of soils contaminated with petroleum hydrocarbons, solvents and/or heavy metals include:

- *Bioremediation.* Enhancement or introduction of microbial organisms in in-situ soils to promote degradation of organic contaminants.
- *Chemical fixation.* Introduction of chemicals that will bind with and stabilize contaminants in soil.
- *Soil washing.* Introducing water solution into soil in-situ to dissolve contaminants, and then removing and treating or disposing of wash water.

TABLE F-1: POTENTIAL CONTAMINANTS FROM HISTORIC INDUSTRIES NEAR THE PROJECT SITE

Key/a/	Historic Industry	Potential Contaminants
A	Empire Foundry & Machine Works; Risdon Iron Works. (Beale Street)	Metals, acids, cyanide, oils, solvents.
B	Vulcan Iron Works; Lloyd & Scovell Iron Co. (Fremont Street)	Metals, acids, cyanide, oils, solvents.
C	Meese & Gottfried Machine Shop; Silk Screen & Printing Shop. (Fremont Street)	Metals, acids, oils, solvents, inks.
D	C.H. Evans Machine Shop; Sheet Metal Works. (Fremont Street)	Metals, acids, oils, solvents.
E	San Francisco Gas Works. (west side Fremont & Howard Streets)	Aliphatic and aromatic hydrocarbons, including tars, greases, oils, and polynuclear compounds.
F	Marine Electric & Book Binding. (at Fremont & Howard Streets)	Solvents, inks, glues.
G	John Finn Metal Works. (south side of Howard Street)	Metals, acids, oils, solvents.
H	Brode & Clark Iron Works; Whittier Coburn Co, Paints, Oils, Glass; Parking lot with UST./b/ (south side of Howard Street)	Metals, acids, cyanide, oils, solvents, gasoline, benzene.
I	Moore & Scott Iron Works; Machine shops. (east side of Beale Street)	Metals, acids, cyanide, oils, solvents.
J	California Iron Works; Manufacturing shops. (east side of Beale Street)	Metals, acids, cyanide, oils, solvents.

/a/ Approximate locations of potential sources of contamination are shown in Figure 13 on p. 58.
/b/ Underground storage tank.

SOURCE: Dames & Moore, *Site History and Subsurface Investigation*, 1990; Environmental Science Associates, Inc.

Excavated soils can be treated either on- or off-site as described above. Excavated soils can also be air stripped by introducing forced air to remove volatile contaminants that are then trapped and collected in a filter medium. Excavated soils that are hauled off-site may be similarly treated at permitted hazardous waste facilities.

Remediation alternatives for clean-up of contaminated groundwater could include in-situ treatment, extraction and on-site treatment, or extraction and off-site treatment and/or disposal. Groundwater is extracted by pumping it out of wells installed on-site. Some of the technologies for treatment of organic contaminants include use of carbon adsorption, filtration systems and oil-water gravity separation. Metal precipitation and subsequent removal of a solid is a common treatment for groundwater contaminated by heavy metals. Extracted groundwater may also be hauled off-site for treatment at a hazardous waste facility. Discharge of treated groundwater to the publicly owned treatment works would require regulatory agency permits.

NOTES - Hazardous Materials

/1/ The Regional Water Quality Control Board (RWQCB) water quality protection objectives and goals for the San Francisco Bay Region are contained in the *Water Quality Control Plan, San Francisco Bay Basin, Region (2)*, December 1986.

/2/ *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA), NIOSH Publication No. 85-115, October, 1985.

/3/ The rate of migration of a substance depends on its chemical and physical properties and the properties of the media through which it flows; e.g., gasoline can migrate readily through the soil, while lead attaches to soil particles and is virtually immobile.

/4/ Dames & Moore, *Site History and Subsurface Investigation, 300 Howard Street, San Francisco, California*, prepared for Bechtel Investments, Inc., October 26, 1990.

/5/ A complete site history conducted for each individual property within the project vicinity could reveal additional potential sources.

APPENDIX G: TYPICAL NOISE LEVELS

TABLE G-1: TYPICAL NOISE LEVELS

	Decibels	
	110	Pile driver (from 50 feet)
Very Loud	100	
		Light helicopter take-off (from 125 feet)
	90	
		Diesel truck (from 50 feet)
	80	
		Radio or TV playing in Living Room
Loud		
	70	
		Passenger car on city street (from sidewalk)
	60	
Quiet	50	
	40	
		Whisper
Very Quiet		
		Rustle of paper
	30	

SOURCE: Department of City Planning, "A Proposal for Citizen Review: Transportation Noise, Environmental Protection Element of the Comprehensive Plan of San Francisco," August, 1984.

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